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DISSERTATION

Significance of Port State Jurisdiction and Control in the context of Prevention of Vessel-Source Marine Pollution

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OUTLINE

INTRODUCTION

I. REASONS OF VESSEL-SOURCE MARINE POLLUTION

1. Oil
   - 1.1. Accidental Discharges
   - 1.2. Operational Discharges
   - 1.3. Shipwrecks
2. Ballast Water
3. Marine Litter
4. Wastewater
5. Anti-Fouling Systems
6. Hazardous and Noxious Cargo Carriage

II. INTERNATIONAL CONVENTIONS ABOUT VESSEL-SOURCE MARINE POLLUTION

1. IMO Conventions
   - 1.1. Historical Background
   - 1.2. Marpol 73/78
   - 1.3. Other IMO Conventions
     - Convention on Control of Harmful Anti-fouling Systems
     - Convention for the Control and Management of Ships' Ballast Water and Sediments
     - Convention on the Removal of Wrecks
2. UNCLOS 1982

III. OVERVIEW OF THE FLAG STATE AND COASTAL STATE IN THE CONTEXT OF PREVENTION OF VESSEL-SOURCE MARINE POLLUTION

1. Flag State Jurisdiction and Control
   - 1.1. In General
   - 1.2. Genueine Link and Flag of Convenience
2. Coastal State Jurisdiction and Control

IV. PORT STATE JURISDICTION AND CONTROL IN THE CONTEXT OF PREVENTION OF VESSEL-SOURCE MARINE POLLUTION

1. In General
2. Port State Jurisdiction and Control
3. Regional Port State Control Agreements
   - 3.1. In General
   - 3.2. Inspection of Vessels under Paris MOU (1982)
4. Evaluation of Port State Authority in the context of Vessel-Source Marine Pollution

CONCLUSION

INTRODUCTION

Throughout history, people have always been in close relationship with the seas. In the early ages, people used seas especially for food harvesting as a result marine plants and fish have become the most important food sources for humans. Today, the seas maintain this feature and forty percent of the protein consumed in the developing world is still supplied by seafood.[1]

After the construction of ships, people have begun to use seas not only as a food source but also for transportation and communication. Although in the beginning, transportation and communication by seas were limited in certain regions, global explorations and the discovery of new trade routes changed this perception. The increased volume of trade and population growth in Europe led to the discovery of the "New World" and new routes to Asia.[2]

The ability to travel to distant parts of the world enabled the shipping industry to grow and the ships have started to play a vital role in the transportation and international trade between ports and countries through connecting supply and demand sources.[3] Ninety percent of world trade is currently carried by almost fifty thousand ships crewed by more than one million seafarers of virtually every nationality.[4] Apart from the rapid increase in the number of ships, the capacities of ships are much higher today. As a result, the volume of maritime trade has increased from approximately 2.5 billion tons to 7.5 billion tons between 1970 and 2006.[5]

Although these promising statistics point to incredible growth in the shipping industry and world economy[6], this is only one side of the same coin. On the other side, this uncontrolled growth means that problems about the protection of the marine environment from vessel-source pollution increase at the same rate.[7]

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[1] Douglas Guilfoyle, *Shipping Interdiction And The Law Of The Sea* (1st edn, Cambridge University Press 2009) p. 3
[2] Niko Wijnolst and Tor Wergeland, *Shipping Innovation* (1st edn, Delft University Press 2009) p. 6
[3] Amir H. Alizadeh and Nikos K. Nomikos, *Shipping Derivatives And Risk Management* (1st edn, Palgrave Macmillan 2009) p. 24
[4] John K. Mansell, *Flag State Responsibility-Historical Development And Contemporary Issues* (1st edn, Springer 2009) p. 1
[5] Matthew Gianni, *Real And Present Danger: Flag State Failure And Maritime Security And Safety* (1st edn, International Transport Workers' Federation 2008) p. 1
[6] Alan E. Branch, *Elements Of Shipping* (8th edn, Routledge 2007) p. 3
[7] Jean-Paul Rodrigue, Claude Comtois and Brian Slack, *The Geography Of Transport Systems* (3rd edn, Routledge 2013) p. 255

After the international community has noticed the catastrophic effects of vessel-source pollution on the marine environment, flag states have been evaluated as the most significant antidote to overcome these problems. Numerous detailed conventions have been provided by the international community and maritime organizations to protect the marine environment from vessel-source pollution. Thus, almost all of the responsibilities have been burdened to the flag states by international conventions. Unfortunately, it has understood that single-handed responsibility of flag states and limited authority of coastal states are inadequate to fulfill this duty. For this reason, the international community and maritime organizations have begun to look for more comprehensive solutions involving more states. As a result, the concept of port state authority has emerged to prevent the marine environment from vessel-source pollution.

Under the light of these developments, the main reasons of vessel-source marine pollution will explain in detail in the first chapter of this dissertation. These reasons will examine under six headings. In the first heading, marine pollution arising from oil discharges will discuss. In this part, oil-based marine pollution will explain under three sub-headings: accidental discharges, operational discharges, and shipwrecks. After that other reasons of vessel-source marine pollution will examine. Wastewater, ballast water, marine litter, anti-fouling systems, and hazardous and noxious cargo carriage will explain respectively.

In the second chapter, the historical background of international regulations about vessel-source marine pollution will examine. The details about the International Maritime Organization (IMO) and the United Nations Convention on the Law of the Sea (UNCLOS) will provide under different sub-headings. Also, brief information about the International Convention for the Prevention of Pollution from Ships (MARPOL) and other IMO conventions about vessel-source marine pollution will explain in this chapter.

The third chapter will provide an overview of the flag state and the coastal state in the context of the prevention of marine pollution from vessels. With this regard, general information about flag and coastal state duties will explain under different sub-headings. Also, the drawbacks of flag states and coastal states will examine in this chapter.

In the last chapter, the port state's duties and responsibilities in the context of vessel-source marine pollution will explain in detail. Firstly, UNCLOS and MARPOL provisions will evaluate in this

part. Then, regional port state control agreements and Paris Memorandum of Understanding will examine. Also, the benefits and drawbacks of port state authority will question. Finally, the significance of port state authority will evaluate in this chapter and the indispensable necessity of the port state authority in the context of prevention of vessel-source marine pollution will explain.

I. REASONS OF VESSEL-SOURCE MARINE POLLUTION

The UNCLOS defines pollution of the marine environment as the introduction of substances or energy into the marine environment directly or indirectly by people. The pollution of the marine environment results or likely to result in deleterious effects such as harm to living resources and marine life, hazards to human health, a hindrance to marine activities, impairment of quality of seawater and reduction of amenities.[8] Also, from the perspective of this definition, it can be said that the marine environment consists not only of the oceans but also the coastal areas where seawater combines with freshwater from rivers and streams.[9]

Generally, land-based activities, vessels, ocean discharging, atmospheric and offshore hydrocarbon exploration, mining activities can cause marine environment pollution. Apart from other reasons, in this chapter, vessel-source marine pollution will examine. In this context, oil-based marine pollution, wastewater, ballast water, marine litter, anti-fouling systems, hazardous and noxious cargo carriage will explain respectively

1. Oil

The desire to take advantage of the opportunities offered by advanced technology has made the world dependent on energy. The existence of energy becomes the most important condition for the maintaining of modern life. Although different resources like sun, coal and radioactive substances are used as energy sources, oil is still the most common and easy way to reach energy in the modern world.

The presence of oil in certain parts of the world and worldwide need for oil have made transportation of oil by sea particularly important in the 20th Century. As a result, the shipping industry

[8] UNCLOS art. 1(4) <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 3 July 2019.
[9] Judith S. Weis, *Marine Pollution-What Everyone Needs To Know* (1st edn, Oxford University Press 2015) p. 1

has become the main system for the transportation of oil. In this context, 1.9 billion tones of oil, corresponding to 62% of the total amount of oil that transported, were carried by ships in 2013.[10]

Transporting oil by sea has great advantages, such as transporting large quantities of oil to different parts of the world. However, increased marine traffic has also led to an increase in vessel-source marine pollution. There are several reasons for oil-based marine pollution. According to the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) report, natural seepage, industrial and urban run-off from land, off-shore production and shipping are the basic reasons of oil-based marine pollution.[11] Among other reasons, accidental discharges, operational discharges, and shipwrecks are shown as the main sources of oil-based marine pollution from vessels and these reasons are responsible for approximately one out of three of the total oil-based marine pollution.[12]

1.1. Accidental Discharges

From the general perspective, accidental oil discharges involve vessels that come in distress or collide, oil well blowouts, pipeline ruptures, and explosions at storage facilities.[13] In the context of vessel-source marine pollution, collisions, grounding of vessels, explosions or fires onboard the basic reasons for the accidental oil-based pollution from vessels.

Although operational discharges have the biggest share in oil-based marine pollution from vessels, accidental discharges have been more important in attracting public attention to the protection of the marine environment.[14] Particularly, numerous tanker accidents since the 1960s have caused both environmental and economic damage to coastal states. Therefore, under the leadership of the affected states, the international community has become more sensitive to accidental discharges.[15]

At this point, it is necessary to mention some major tanker accidents. First of all, the Torrey Canyon accident can be shown as the first catastrophic oil tanker accident in history. This accident occurred on 18 March 1967 off the coast of England and 117,000 tons of crude oil spilled into the sea.

[10] Fredrik J. Lindgren, Magda Wilewska-Bien, Lena Granhag, Karin Andersson, K. Martin Eriksson, "Discharges to the Sea", *Shipping and the Environment-Improving Environmental Performance in Marine Transportation* (1st edn, Springer 2016) p. 128
[11] GESAMP 2007 Estimates of oil entering the marine environment from sea-based activities Rep. Stud. GESAMP No. 75, 96 pp. <http://www.gesamp.org> accessed 20.06.2019
[12] GESAMP 2007 <http://www.gesamp.org> accessed 20.06.2019
[13] Peter Burgherr, "In-Depth Analysis Of Accidental Oil Spills from Tankers in the context of Global Spill Trends From All Sources" (2006) 140 Journal of Hazardous Materials p. 245
[14] Ibid p. 245
[15] Julian Roberts, *Marine Environment Protection And Biodiversity Conservation* (1st edn, Springer 2007) p. 48

As a result of the accident, the coasts of England and France were severely damaged and thousands of marine organisms died.[16]

Another major tanker accident after Torrey Canyon occurred on 16 March 1978 off the coast of France. One of the biggest environmental disasters occurred as a result of the accident caused by an oil tanker named Amoco Cadiz, which carries 220,000 tons of crude oil.[17] Crude oil, which spread to the sea, caused great damage, especially to seabirds. In addition, the 130-mile long French coastline was affected. Despite all the efforts, the environmental effects of the accident completely disappeared for about 10 years.[18] Further, the accident triggered the establishment of the Paris Memorandum of Understanding (MOU), the first regional initiative on port state control.

On March 24, 1989, the largest oil tanker accident in US history occurred. As a result of the accident, 11 million gallons of crude oil from the Exxon Valdez tanker were spilled into the sea. The spill occurred at a time of year when the tidal fluctuations were nearly 18 feet, causing the oil to spread onto shorelines way above the normal zone of wave action. The oil eventually covered 1,300 miles of coastline, and 11,000 square miles of ocean. After the accident, 250,000 seabirds, hundreds of seals and dozens of whales died.[19] Besides, the Exxon Valdez accident led to amendments to the MARPOL in 1992 concerning double hulls.

In the accident that occurred on 12 December 1999, 14000 tons of crude oil was spilled into the sea from the vessel named Erika. As a result of the accident, France's 400 km long coast was exposed to pollution. The accident led the European Union to introduce new legal arrangements for port state control.[20]

Finally, on 13 November 2002 off the coast of Spain, 53000 tons of crude oil was spilled into the sea from the Prestige oil tanker. This environmental disaster has affected hundreds of thousands of marine organisms. After the accident, the Spanish government stopped fishing activities in the

[16] Joseph C. Sweeney, "Oil Pollution Of The Oceans" (1968) 37 Fordham Law Review p. 158
[17] James R. Payne and Charles R. Phillips, *Petroleum Spills In The Marine Environment* (1st edn, Taylor & Francis Group 1985) p. 51
[18] John Warren Kindt, "Vessel-Source Pollution And The Law Of The Sea" (1984) 17 Vanderbilt Journal of Transnational Law, p. 288
[19] Barbara E. Ornitz and Michael A. Champ, *Oil Spills First Principles: Prevention And Best Response* (1st edn, Elsevier 2002) p. 15
[20] Wang Hui, "The EU Marine Oil Pollution Prevention Regime-Recent Developments" (2004) 13 European Environmental Law Review p. 297

accident zone for 6 months. Also, amendments were made to MARPOL Annex I as a result of the accident.[21]

As can be seen from the above examples, all major tanker accidents have caused worldwide reactions. Environmental disasters resulting from accidents and deaths of marine organisms have attracted the attention of international media and society. Thus, after each accident, initiatives have been started to prevent accidents and amendments have been made in the existing legal regulations.

1.2. Operational Discharges

Operational discharges originate from routine operations, bilge water, illegal cleaning of tanks, and bunkering. Operational discharges are the cause of 50% of the spills with less than 700 tones of released oil and 91% of the spills with less than seven tones of released oil.[22] Although oil tanker accidents cause large amounts of oil to spill into the sea and attract more international attention, operational discharges are more important in terms of causing marine pollution.

One of the most important reasons for the operational discharges is routine operations. Oil discharge from routine operations is related to the technical characteristics and design of the vessels. In recent decades, technological developments have enabled the production of environmentally friendly engines and the use of these engines has been encouraged by international regulations. On the other hand, despite the enforcement of international regulations, improvements in vessel design and on-board safety installations, problems still exist that ultimately lead to petroleum spills of various sizes.[23]

Another problem with operational discharges is bilge water. The bottom inner part of the ship's hull is called bilge in which liquids flow through the inner cavities and upper decks. The main sources of fluids discharged into the bilge are the main engine room and the auxiliary engine room.[24] Bilge water is a mixture of various substances used in the machine room and it contains fuel, oils, lubricating oils, hydraulic oils, detergents, and various metals.[25] In addition, propeller shaft bearings, leisure

[21] Carmen Casado, "Vessels On The High Seas: Using A Model Flag State Compliance Agreement To Control Marine Pollution" (2004) 35 California Western International Law Journal p. 203
[22] Ibid n. 10 p. 131
[23] Geert Potters, *Marine Pollution* (1st edn, 2013) <http://bookboon.com> accessed 2 July 2019 p. 137
[24] Ibid n. 10 p. 132
[25] K. Karakulski, W. A. Morawski and J. Grzechulska, "Purification Of Bilge Water By Hybrid Ultrafiltration And Photocatalytic Processes" (1998) 14 Separation and Purification Technology p. 164

boating, illegal washing of tanks and engine equipment can be shown as the other common sources of oil discharged into the marine environment.[26]

1.3. Shipwrecks

Shipwrecks are the other important reason for the oil-based marine pollution from ships. According to Baltic Marine Environment Protection Commission's (HELCOM) report about potentially polluting wrecks in marine waters, currently, there are 8569 potentially polluting wrecks with 1583 tank vessels and 6986 non-tank vessels in the oceans.[27] These wrecks leak their contents due to corrosion and affect the environment because these wrecks have the potential to release at least 2.5 million tons of oily components to the marine environment.[28]

2. Wastewater

The wastewater can be divided into two groups as black water (sewage) and grey water (non-sewage wastewater). These different kinds of wastewater have different sources and characteristics and are subject to different discharge regulations.[29]

The main source of sewage is the toilets of the vessels; therefore, it contains bacteria, viruses, and other toxic substances which pose a threat to human health. Besides, sewage may also contain treatment chemicals such as chlorine and formaldehyde.[30] Sewage pollution in the marine environment poses a serious risk to the fitness of seafood for human consumption. Food poisoning is highly likely if humans consume seafood that has been exposed to sewage.[31] On the other hand, greywater originates from dishwashers, washing machines, bathrooms and other washing areas of the ship. Like sewage, greywater contains several harmful and toxic substances in its structure. Greywater often contains a wide range of pollutants, e.g. bacteria, suspended solids, metals, detergents, oil, grease, and food particles.

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[26] J. W. Farrington, “Oil Pollution In The Marine Environment I: Inputs, Big Spills, Small Spills, And Dribbles” (2013) 55 Environment Science and Policy for Sustainable Development p. 4
[27] J. Michel and D. S. Etkin, “Potentially Polluting Wrecks In Marine Waters” (HELCOM 2005) <https://portal.helcom.fi/meetings/SUBMERGED%205-2016-377/Related%20Information/Potentially%20Polluting%20Wrecks%20in%20Marine%20Water_Michel_etal_2005.pdf> accessed 9 July 2019
[28] J. Michel and D. S. Etkin, “Potentially Polluting Wrecks In Marine Waters” (HELCOM 2005)
[29] Ibid n. 10 p. 141
[30] Anna West, “Marine Pollution From Vessel Sewage In Queensland” (2004) 18 Australian and New Zealand Maritime Law Journal p. 128
[31] Ibid p. 128

Considering that wastewater originates especially from the usage of people on ships, it can be said that the most important factor in the formation of wastewater is cruise ships carrying a large number of people. This category of ships produces a significant amount of wastewater that could threaten the marine environment if discharged to the sea. Further leisure boats, especially in coastal areas, pose a serious threat to the marine environment. Particularly, in the tourist areas where these boats are widely used, wastewater discharged into the sea causes a significant amount of marine pollution.

Discharging untreated or poorly treated wastewater from ships into the sea can be aesthetically disturbing, especially in coastal areas. In addition, the release of pathogens into the sea increases the risk of diseases for people swimming in contaminated water or eating seafood.[32] From the perspective of the marine environment, there are different effects. The discharge of nutrients and organic matter leads to marine eutrophication and increases the risk of blooms of algae, followed by the decomposition of organic matter.[33] This process poses a threat to marine life, resulting in decreased biodiversity because, in the end, only the most resistant species can survive. Moreover, eutrophication reduces the water quality for bathing; consequentially, the recreational value of the coastal environment may decrease.[34]

There are national and international regulations about the discharge of wastewater from ships. With this regard, Annex IV of MARPOL 73/78 states the rules regarding the discharge of ship-generated sewage into the sea. These rules apply to vessels exceeding 400 GT or carrying more than 15 passengers. It should be noted that Annex IV of the MARPOL 73/78 regulates only sewage, whereas grey water is sometimes regulated at the national and regional levels.[35]

3. Ballast Water

[32] Ibid n. 10 p. 142
[33] Justus E. E. van Beusekom, “Eutrophication”, *Handbook on Marine Environment Protection-Science, Impacts and Sustainable Management* (1st edn, Springer 2018) p. 429
[34] Ibid p. 429
[35] Aaron Courtney, Eric Fjelstad and Sloane Anders Wildman, “Multijurisdictional Regulation of Cruise Ship Discharges” (2004) 19 Natural Resources & Environment p. 52

Ballast water is used to ensure the stability of ships during navigation.[36] In ancient times, sand, rock, or other solid materials were used to stabilize the ship, especially in unloaded situations. With the emergence of ships with metal hulls in modern times, ships began to use ballast tanks.[37]

As a result of the construction of larger ships and the increase in transportation by ships, the size of the ballast water tanks on the ships has also increased. The increase in the size of the tanks has also triggered to increase the amount of ballast water used by ships. [38] Thus, the sea organisms in the water have been transferred to the different regions by discharging the ballast water. Approximately 4000 species have been estimated to be transferred by ships each day due to this process.[39]

Reducing travel times increases the possibility of survival of the organisms transferred with ballast water. Thus, transferred organisms have the opportunity to settle and spread more quickly in their new environment.[40] When aquatic organisms reach a new environment and adapt to physical conditions, they begin to affect this new environment. Transferred organisms begin to consume other organisms that lived in this region. In this way, these organisms spread rapidly in the new region and become invasive creatures.[41]

As a result of all these negative effects of ballast water, IMO adopted the "International Convention for the Control and Management of Ships Ballast Water and Sediments" (BWMC) in 2004 to prevent, minimise and eliminate risks to the environment, human health, property and resources due to the transfer of harmful aquatic organisms via ship ballast water.[42]

4. Marine Litter

The definition of marine litter is different from wastewater. United Nations Environment Programme (UNEP) defines marine litter as any persistent, manufactured or processed solid material

[36] Michael Tsimplis, "Alien Species Stay Home: The International Convention for the Control And Management of Ships' Ballast Water And Sediments" (2004) 19 International Journal of Marine and Coastal Law p. 411
[37] Miguel Garcia-Revillo, "Shipping, Marine Environmental Protection And Alien Invasive Species", *Maritime Safety And Environmental Protection In Europe-Multiple Layers In Regulation And Compliance* (1st edn, Marsafenet 2015) <http://www.marsafenet.com> accessed 2 July 2019 p. 26
[38] Saiful Karim, *Prevention Of Pollution Of The Marine Environment From Vessels-The Potential And Limits Of The International Maritime Organisation* (1st edn, Springer 2015) p. 67
[39] Ibid n. 10 p. 154
[40] Stephan Gollasch and Erkki Leppakoski, "Risk Assessment And Management Scenarios for Ballast Water Mediated Species Introductions into The Baltic Sea" (2007) Aquatic Invasions Volume 2 Issue 4 313-340
[41] Cory Hebert, "Ballast Water Management: Federal, States, And International Regulations" (2010) 37 Southern University Law Review p. 317
[42] Dennis M. King and Mario N. Tamburri, "Verifying Compliance With Ballast Water Discharge Regulations" (2010) 41 Ocean Development & International Law p. 154

discarded, disposed of or abandoned in the marine and coastal environment.[43] According to UNEP's report, marine litter consists of items that have been made or used by people and deliberately discarded into the sea or rivers or on beaches; brought indirectly to the sea with rivers, sewage, storm water or winds; accidentally lost, including material lost at sea in bad weather (fishing gear, cargo); or deliberately left by people on beaches and shores.[44]

The routine operations of the crew and passengers generate solid waste from activities such as food preparation and ship operations, and cargo-related activities such as spilling and disposal of packaging materials. Disposal of these wastes may include organic, biological, chemical and toxic pollutants. Apart from jeopardizing the safety of ships, marine litter can have effects such as disrupting the cleanliness and aesthetics of the seashore and causing injury or illness to people. In addition to these negative impacts, another important negative impact of marine litter is its impact on the marine environment and marine organisms.[45]

The discharge of garbage generated on ships is governed by regulations in Annex V of MARPOL 73/78 for the prevention of garbage pollution from ships. The revised Annex V prohibits the discharge of all garbage into the sea except for food waste, animal carcasses, non-harmful cargo residues, cleaning agents and additives.

5. Anti-Fouling Systems

Fouling can be defined as the undesirable accumulation of microorganisms, algae, and animals on artificial surfaces immersed in seawater.[46] Since ancient times, seafarers have paid attention to cleaning the ship's hull from organisms that increase friction. Efforts in this regard can be generally referred to as anti-fouling.

Both hard and soft fouling organisms are major problems for the marine industry because they cause increased friction on ship hulls; this results in increased weight, low speed, and low

[43] "Marine Litter-An Analytical Overview" (United Nations Environment Programme UNEP 2005, Nairobi, Kenya) <http://wedocs.unep.org/> accessed 17 June 2019.
[44] UNEP Report <http://wedocs.unep.org/> accessed 17 June 2019
[45] Arie Trouwborst, "Managing Marine Litter: Exploring The Evolving Role Of International And European Law In Confronting A Persistent Environmental Problem" (2011) 27 Merkourios: Utrecht Journal of International and European Law p. 7
[46] Diego Meseguer Yebra, Søren Kiil and Kim Dam-Johansen, "Antifouling Technology—Past, Present And Future Steps Towards Efficient And Environmentally Friendly Antifouling Coatings" (2004) 50 Progress in Organic Coatings, p. 75-104

maneuverability, and effects that need to be compensated by increased fuel consumption.[47] Besides, transporting these organisms to a different living environment with the ship has negative effects on the marine environment.

Although there are negative consequences of fouling, anti-fouling operations also cause damages, especially to the marine environment. In particular, the use of tributyltin (TBT) has increased in the field of anti-fouling since the 1960s. The usage of TBT was an effective method of combating fouling. On the other hand, TBT has subsequently been understood to have adverse effects, particularly on marine mammals and fish.[48] After recognizing the negative side effects of TBT, IMO prohibited the use of TBT in anti-fouling in 2001. At the same year, IMO adopted the International Convention on the Control of Harmful Anti-fouling Systems on Ships which regulates antifouling paints.

6. Hazardous and Noxious Cargo Carriage

Hazardous and noxious chemical substances have different purposes. These substances are generally used to facilitate life for people. For example, today, these substances are used in energy production, cleaning, agriculture or health. In the early days when chemicals began to be used in daily life, the sea was considered the last stop of chemical substances. As the harmful and toxic effects of chemical substances were not known exactly, the diluting effect of the sea was considered to be the solution of marine pollution.[49]

However, it has been understood that, due to very large quantities produced and due to their high persistence or toxicity, the majority of these substances exhibit adverse effects for the environment. The impact of hazardous substances on the marine and coastal environment shows strong regional differences. The greatest impact is measured or predicted in coastal areas close to cities, harbors, marinas, estuaries, then in transport lanes and hot spot areas such as offshore oil and gas platforms and at disposal sites of war agents and industrial chemicals.

Hazardous and noxious cargo carriage is one of the most important reasons for vessel-sourced marine pollution. Dangerous cargo poses a special hazard to the environment and society.

[47] James Kraska and Daniel Rittschof, "Toward A Global Regime Of Vessel Anti-Fouling" (2015) 26 Duke Environmental Law & Policy Forum p. 55
[48] Nils Axel Braathen, *Environmental Impacts Of International Shipping-The Role Of Ports* (1st edn, OECD Publications 2011) p. 107
[49] Katja Broeg and Norbert Theobald, "Pollution With Hazardous Substances", *Handbook On Marine Environment Protection-Science, Impacts and Sustainable Management* (1st edn, Springer 2018) p. 395

The volume of dangerous and polluting goods transported by sea is increasing and will likely continue to increase. Many different types of hazardous and noxious cargo are carried by ships and transported and stored in ports, including substances such as caustic soda, sulphuric acid, nitric acid, phosphoric acid, ammonia, coal and tar products, and many petrochemical products.[50]

With this regard, MARPOL Annex II regulates the transportation of harmful substances. Accordingly, discharges of these substances are only permitted in port receptacles, unless the concentration of a hazardous substance is diluted to the prescribed levels. Further, MARPOL Annex 2 refers to the construction and equipment of ships carrying dangerous chemicals in bulk, which identifies more than 250 noxious liquid substances.

Also, MARPOL Annex 3 regulates the prevention of pollution by harmful substances carried by sea in packaged forms by providing detailed rules on standards on the packaging, marking, labeling, documentation, stowage, and quantity limitations. Accordingly, it is prohibited to carry harmful substances identified as marine pollutants in the International Maritime Dangerous Goods (IMDG) Code, except in accordance with the Annex.

II. INTERNATIONAL CONVENTIONS ABOUT VESSEL-SOURCE MARINE POLLUTION

1. IMO Conventions

1.1. Historical Background

As a specialized agency of the United Nations (UN), IMO is the global standard-setting authority for the safety, security and environmental performance of international shipping. The main role of the IMO is to create a regulatory framework for the shipping industry that is fair and effective, universally adopted and universally implemented.[51] Before its current position, IMO experienced some changes, including its name, since its establishment in 1948. As the first international maritime organization, the Intergovernmental Maritime Consultative Organization (IMCO) was established in 1948. It should be pointed out that, although it was a maritime organization, IMCO's primary objective was not marine pollution but navigational safety at sea.[52]

[50] Mikael Karlsson and Michael Gilek, "Management Of Hazardous Substances In The Marine Environment", *Handbook On Marine Environment Protection-Science, Impacts and Sustainable Management* (1st edn, Springer 2018) p. 715
[51] <http://www.imo.org/en/About/Pages/Default.aspx> accessed 3 July 2019
[52] Ibid n. 26 p. 4

After IMCO Convention entered into force in 1958, the International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL) came into effect, which had provided for certain functions to be undertaken by IMO when it came into being.[53] The OILPOL Convention, which included specific regulations on marine pollution, was followed by certain environmental protection provisions in the United Nations (UN) 1958 Marine Conventions Act. These conventions were the Convention on Fishing and Conservation of the Living Resources of the High Seas; and the Convention on the Continental Shelf and the Convention on High Seas. These conventions also provided a basis for the 1982 UNCLOS. [54]

IMO adopted MARPOL in 1973, when catastrophic environmental disasters in the 1960s led to questioning the adequacy of existing contracts. Before MARPOL came into force, IMO organized a conference on Tanker Safety and Pollution in 1978 as a result of tanker accidents in the 1970s. Thus, the 1978 protocol was accepted as a part of MARPOL and this combination renamed as MARPOL 73/78. Consequently, it was assumed that MARPOL 73/78 superseded the OILPOL convention.[55]

As will be explained in detail below, MARPOL is the most detailed convention on the prevention of vessel-source marine pollution. It regulates not only technical requirements and design of the vessels but also introduces construction suggestions and necessary equipment for pollution prevention. Moreover, MARPOL offers a new understanding of the protection of the marine environment through a system of certifications, inspections, and surveys.[56]

MARPOL regulates different types of vessel-source marine pollution in its annexes. Accordingly, MARPOL regulates oil-based marine pollution, marine pollution from chemicals, pollution by marine litter and pollution by waste water. Other reasons for vessel-sourced marine pollution are regulated in different IMO conventions. International Convention for the Control and Management of Ship's Ballast Water and Sediments[57] (BWM Convention) was adopted in 2004 by IMO. Further, the

[53]<http://www.imo.org/en/OurWork/Environment/PollutionPrevention/OilPollution/Pages/Background.aspx> accessed 3 July 2019
[54] Ibid n. 26 p. 5
[55] David Hughes, Tim Jewell, Jason Lowther, Neil Parpworth, Paula de Perez, *Environmental Law* (1st edn, Oxford University Press 2002) p. 626
[56] Ibid p. 628
[57] <http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships'-Ballast-Water-and-Sediments-(BWM).aspx> accessed 3 July 2019.

International Convention on the Control of Harmful Anti-fouling Systems on Ships[58] (AFS Convention) was adopted in 2001 by IMO.

1.2. MARPOL 73/78

The International Convention for the Prevention of Pollution from Ships 1973 as amended by the Protocol of 1978, which is more commonly known as MARPOL 73/78, is the most significant attempt on the international level to prevent vessel-source marine pollution.[59] After this attempt, there have been promising developments regarding the prevention of vessel-source marine pollution. For example, at the time of the adoption of MARPOL, oil discharges from ships were estimated at about 2 million tons per year.[60] In 2007, as a result of the regulations introduced by MARPOL, it was observed that vessel-based oil discharges decreased to 450,000 tons annually.[61] When it is considered that, discharging of 35.000 tonnes of crude oil caused the death of 250.000 sea birds in Exxon Valdez accident[62] the importance of this decline can be better understood. Even only these statistics can demonstrate the positive effects of MARPOL to prevent the marine environment from vessel-source pollution.

Before the adoption of the MARPOL, particularly at the beginning of the 20th century, some international attempts were done about the prevention of vessel-source marine pollution as a result of the political pressure of the United Kingdom (UK) and the United States (US). However, these attempts failed due to the Second World War.[63]

After the war, the rapidly growing world economy triggered the demand for energy resources like oil. This demand causes a significant increase in tanker traffic in the seas and tanker accidents.[64] Therefore, the prevention of the marine environment from vessel-source pollution attracted more attention. Consequently, In 1948, the UN took the first post-war steps to address the issue of vessel-source pollution of the marine environment by holding an international maritime conference in

[58] <http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-on-the-Control-of-Harmful-Anti-fouling-Systems-on-Ships-(AFS).aspx> accessed 3 July 2019.
[59] Manfred Nauke and Geoffrey L. Holland, "The Role And Development Of Global Marine Conventions: Two Case Histories" (1992) 25 Marine Pollution Bulletin p. 74
[60] Andrew Griffin, "MARPOL 73/78 And Vessel Pollution: A Glass Half Full Or Half Empty?" (1994) 1 Indiana Journal of Global Legal Studies p. 489
[61] Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law And The Environment*(3rd edn, Oxford University Press 2009) p. 381
[62] John M. Weber and Robert E. Crew, "Deterrence Theory And Marine Oil Spills: Do Coast Guard Civil Penalties Deter Pollution?" (2000) 58 Environmental Management Journal p. 161
[63] Alan Khee-Jin Tan, *Vessel Source Marine Pollution: The Law And Politics Of International Regulation* (1st edn, Cambridge University Press 2005) p. 107
[64] Ibid p. 109

Geneva.[65] Geneva Conference played a very important role in the establishment of the Inter-Governmental Maritime Consultative Organization (IMCO), the precursor to IMO.

During the establishment of IMCO, a conference was held in London to prevent marine pollution from oil discharges. Thirty-two countries, representing ninety-five percent of the world's shipping tonnage, participated in the conference.[66] This conference was the result of growing public concern about oil discharges from ships, and its effects on the marine environment.[67] The London Conference was held by the initiatives of the UK and it was the first multinational agreement on the prevention of the marine environment from oil-based pollution. Eventually, Oil Pollution Prevention Convention (OILPOL) was accepted and entered into force on 26 July 1958.[68]

According to OILPOL, it was prohibited to discharge oil into the sea within a 50 nautical-mile coastal zone.[69] OILPOL also included provisions requiring ships registered in the territory of the contracting states to be equipped with certain pollution prevention facilities and establishment of facilities for the disposal of oily substances in the main ports of the contracting states.[70] OILPOL also ordered the ships to carry an oil record book, which required the entry of details of oil discharges and the authorities of a contracting state could inspect at the ports of that state.[71] OILPOL left almost all these responsibilities to the flag states. Further, OILPOL mostly ignored the coastal states' and port states' jurisdiction in the context of the prevention of vessel-source marine pollution. As a result, OILPOL could not be implemented efficiently.[72]

The Torrey Canyon accident in 1967 once again drew attention to vessel-source marine pollution. In this accident, the highest amount of crude oil (120,000 tons) ever poured into the sea up to that time. After the accident, IMO introduced a series of measures designed to prevent tanker

[65] Mark Szepes, "MARPOL 73/78: The Challenges Of Regulating Vessel-Source Oil Pollution" (2013) 2 Manchester Law Review Crime & Ethics p. 77
[66] Jeff B. Curtis, "Vessel-Source Oil Pollution And Marpol 73/78: An International Success Story" (1985) 15 Environmental Law p. 684
[67] Ronald B Mitchell, "Regime Design Matters: Intentional Oil Pollution And Treaty Compliance" (1994) 48 International Organization Foundation p. 431
[68] Emeka Duruigbo, "Reforming The International Law And Policy On Marine Oil Pollution" (2000) 31 Journal of Maritime Law and Commerce p. 69
[69] Ibid p. 78
[70] Gini Mattson, "MARPOL 73/78 And Annex I: An Assessment of Its Effectiveness" (2006) 9 Journal of International Wildlife Law and Policy p. 178
[71] David Michael Collins, "The Tanker'S Right Of Harmless Discharge And Protection Of The Marine Environment" (1987) 18 Journal of Maritime Law and Commerce p. 278
[72] Parry Oei, "Oil Pollution And International Law: Singapore Experience With The New Law Of The Sea" (1999) 4 Asia Pacific Journal of Environmental Law

accidents and to minimize their consequences. It also tackled the environmental threat caused by routine operations which were a bigger menace than accidental pollution.[73]

Following the Torrey Canyon disaster, a conference was held in London with the participation of 73 countries to address public concerns about the vessel-source marine pollution in 1973.[74] The Conference produced the International Convention for the Prevention of Pollution from Ships (MARPOL 73) which was described as the most ambitious international treaty covering maritime pollution ever adopted. In contrast to OILPOL 54 which dealt only with oil, MARPOL 73's comprehensive jurisdiction included not only oil pollution but all forms of vessel pollution. Most of its technical requirements were regulated in different annexes of the convention, which addressed oil, chemicals, tanks and containers, sewage and garbage, respectively.[75]

MARPOL 73 was subsequently modified by the Protocol of 1978 Relating to the International Convention for the Prevention of Pollution From Ships on February 17, 1978 (MARPOL 78). The Convention, as modified by the Protocol of 1978, is known collectively as either MARPOL 73/78 or MARPOL. It entered into force on October 2, 1983.[76] Article 9 (1) MARPOL 73/78 provided that upon its entry into force, MARPOL 73/78 superseded OILPOL 54 as between States Parties to both conventions.[77] States Parties to OILPOL 54 but not to MARPOL 73/78 remained therefore bound by the former's provisions.[78]

MARPOL Annex I entered into force on 2 October 1983. It includes rules for the prevention of oil pollution both from accidents and operational reasons. Annex I contains specific rules for oil tankers. Double hull requirement, crude oil washing system, separated ballast tanks, oil filtering equipment can be demonstrated as some of these requirements. In addition, special marine areas are defined in Annex I for the prevention of oil pollution. The discharging of waste water or bilge water into these areas is subjected to strict rules.[79]

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[73] <http://www.imo.org/en/About/HistoryOfIMO/Pages/Default.aspx> accessed 4 July 2019
[74] Gerard Peet, "The MARPOL Convention: Implementation And Effectiveness" (1992) 7 International Journal of Estuarine and Coastal Law p. 277
[75] Paul Stephen Dempsey, "Compliance And Enforcement In International Law-Oil Pollution Of The Marine Environment By Ocean Vessels" (1984) 6 Northwestern Journal of International Law & Business p. 539
[76] Rebecca Becker, "MARPOL 73/78: An Overview In International Environmental Enforcement" (1998) 10 The Georetown International Environmental Law Review p. 628
[77] "MARPOL" <http://www.mar.ist.utl.pt/ > accessed 5 July 2019
[78] Erik Jaap Molenaar, *Coastal State Jurisdiction Over Vessel-Source Pollution* (1st edn, Kluver Law International 1998) p. 63
[79] "MARPOL 73/78" <http://imo.udhb.gov.tr/TR/19Marpol.aspx> accessed 5 July 2019.

MARPOL Annex II regulates the transportation of harmful substances. The categories are divided according to the degree of harm caused by the discharge of harmful substances into the sea. Discharges of these substances are only permitted in port receptacles unless the concentration of a hazardous substance is diluted to the prescribed levels. Further, under Annex II, parties to the Convention agree to provide reception facilities for the noxious substances to ships using its ports.[80]

MARPOL Annex III, entitled Regulation for the Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form, provides detailed regulations on packaging, marking, labeling, documentation, stowage, and quantity limitations. It is prohibited to carry harmful substances identified as marine pollutants in the International Maritime Dangerous Goods (IMDG) Code[81], except in accordance with the Annex.[82]

MARPOL Annex IV contains guidelines for the prevention of sewage pollution. As described above, wastewater includes waste from ship toilets and animal transported sections. This annex prohibits the discharge of sewage from the ship into the sea or imposes certain rules, such as the discharge of at least 12 nautical miles offshore. In addition, Annex IV defines specific marine areas for the prevention of sewage pollution. It regulates the conditions and form of the document to be given as an indicator of the compliance of the ships with the rules. This section entered into force on 27 September 2003 as it is not a compulsory annex.[83]

MARPOL Annex V aims to prevent waste pollution from ships. In this annex, garbage defines in different categories as plastic, food waste, glass, metal, packaging waste.[84] Annex V completely prohibit to dispose of plastic waste into the sea. Discharging many categories of garbage into the sea is either prohibited or subject to very strict exceptions. This section entered into force on 31 December 1988 as it is not a compulsory annex.[85]

1.3. Other IMO Conventions

[80] J. M. Häkkinen and A. I. Posti, "Overview Of Maritime Accidents Involving Chemicals Worldwide And In The Baltic Sea", *Marine Navigation and Safety of Sea Transport-Maritime Transport & Shipping* (1st edn, Taylor & Francis Group 2013) p. 19

[81] "IMDG Code" <http://www.imo.org/en/Publications/IMDGCode/Pages/Default.aspx> accessed 5 July 2019.

[82] Alan Simcock, "Shipping", *Handbook On Marine Environment Protection-Science, Impacts and Sustainable Management* (1st edn, Springer 2018) p. 121

[83] Louise de La Fayette, "Protection Of The Marine Environment In 2000" (2001) 31 Environmental Policy and Law, p. 144

[84] Aleke Stöfen-O'Brien and Stefanie Werner, "Waste/Litter And Sewage Management", *Handbook on Marine Environment Protection-Science, Impacts and Sustainable Management* (1st edn, Springer 2018) p. 756

[85] B. S. Sarinas and others, "Solid Waste Management: Compliance, Practices, Destination And Impact Among Merchant Vessels Docking In Iloilo Ports", *Marine Navigation and Safety of Sea Transportation Maritime Transport & Shipping* (1st edn, Taylor & Francis Group 2013) p. 131

Although MARPOL 73/78 is the most important international convention for the prevention of marine pollution from vessels, as explained above MARPOL's annexes do not regulate all the causes of vessel-source marine pollution. Therefore, other conventions have been recently adopted to regulate additional reasons of vessel-source pollution.

One of these conventions, The International Convention on Control of Harmful Anti-fouling Systems (AFS Convention), was adopted in 2001 and entered into force in 2008.[86] The Convention prohibits the use of harmful organotins in antifouling paints used on ships and establishes a mechanism to prevent the potential future use of other harmful substances in antifouling systems.[87] The AFS Convention requires its parties to prohibit the application, re-application, installation, or use of antifouling systems listed in Annex 1 of the convention which provides a control list for antifouling systems.[88]

Another important IMO convention is the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), which was adopted in 2004 and entered into force in 2017.[89] BMW Convention is the first international agreement that provides legal and technical instruments to assess the risks posed by the transfer of organisms by ships. Generally, the BWM Convention aims to reduce the introduction of pathogens and non-native species into port waters and coastal ecosystems. Accordingly, the BWM establishes an inspection and enforcement regime.[90]

The BWM Convention establishes a two-stage process for ballast water management. The BWM Convention, together with its Annex and additional Guidelines, sets out four separate elements integrated into ballast water management. These include planning and record-keeping; sediment uptake and discharge management; management of ballast water uptake and discharge; and special area requirements.[91] The additional responsibilities set out in the BWM contract relate to the

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[86] <http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-on-the-Control-of-Harmful-Anti-fouling-Systems-on-Ships-(AFS).aspx> accessed 7 July 2019.
[87] Cato C. ten Hallers-Tjabbes and others, "Communicating The Harmful Impact Of TBT: What Can Scientists Contribute To EU Environmental Policy Planning In A Global Context" (2003) 17 Ocean Year Book p. 419
[88] Ibid n. 47 p. 58
[89] <http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships'-Ballast-Water-and-Sediments-(BWM).aspx> accessed 7 July 2019.
[90] Dorota Pyc, "Ballast Water Management In The Baltic Sea Region" (2012) 85 Polish Review of International and European Law p. 86
[91] Nengye Liu, "Prevention Of Invasive Species From Ballast Water" (2013) 28 The International Journal of Marine and Coastal Law p. 175

notification, information provision, research and development, cooperation, execution, and compliance.[92]

Lastly, The Nairobi International Convention on the Removal of Wrecks was adopted by an international conference held in Kenya in 2007 and entered into force on 14 April 2015. The Convention provides the legal basis for States to remove shipwrecks that may have the potential to affect adversely the safety of lives, goods, and property at sea, as well as the marine environment.[93]

Removal of Wrecks Convention is the first international convention concerning wreck removal. Also, It is important in establishing uniform rules for shipowners. It provides countries a legal reason to require shipowners to remove shipwrecks and also provides a legal opportunity for the countries themselves to remove the shipwrecks.[94] Adoption of the Convention tries to give answers about three basic issues; in which circumstances a shipwreck poses a navigational hazard; in which circumstances a shipwreck has the potential to damage the marine environment; and what is the cost of removing shipwreck?[95] The Convention makes shipowners financially liable and requires them to take out insurance or provide other financial security to cover the costs of wreck removal. It also provides States with a right of direct action against insurers.[96]

2. UNCLOS 1982

Third United Nations Conference on the Law of the Sea was convened in New York in 1973. It ended nine years later with the adoption of the United Nations Convention on the Law of the Sea.[97] The UNCLOS was signed on 10 December 1982 and enforced on 28 July 1996 and it was described at the time of its adoption as a constitution for the seas.[98] The Convention sets out the rules and

[92] Karen Scott, "Defending The World Below The Brine, Managing Invasive Species Under The 2004 Ballast Water Convention-A New Zealand Perspective" (2008) 14 Journal of International Maritime Law p. 309
[93]<http://www.imo.org/en/About/conventions/listofconventions/pages/nairobi-international-convention-on-the-removal-of-wrecks.aspx> accessed 7 July 2019.
[94] Ane Haugland, "Be Careful Where Your Ship Gets Wrecked: A Comparative Study Of Wreck Removal In The United States And Norway And The Implications Of The Nairobi International Convention On The Removal Of Wrecks" (2017) 16 Loyola Maritime Law Journal p. 65
[95] Craig J. S. Forrest, "At Last: A Convention On The Removal Of Wrecks" (2008) 14 Journal of International Maritime Law p. 394
[96] Livashnee Naidoo, "The Nairobi International Convention On The Removal Of Wrecks, 2007: Sinking Or Salvaging South Africa's Wreck-Removal Legislation" (2015) 132 The South African Law Journal p. 857
[97] <https://www.un.org/depts/los/convention_agreements/convention_historical_perspective.htm#Third%20Conference> accessed 8 July 2019
[98] Liu Nengye, "International Legal Framework on The Prevention Of Vessel-Sourced Pollution" (2010) 2 China Oceans Law Review p. 242

principles governing all ocean activities, from navigation to fishing, including marine scientific research and deep seabed mining.[99]

The obligations of states to protect the marine environment are not only found in the IMO conventions but also in the UNCLOS. While IMO instruments are more concerned with technical issues related to basic pollution control standards, UNCLOS provides a broad framework of jurisdictions for regulating marine pollution.[100] In this context, UNCLOS does not create specific standards for pollution, rather it elaborates the general principles and obligations and recognizes that the specific standards will be implemented through other international instruments.[101]

UNCLOS divides marine spaces into jurisdictional zones and forms the basis for international cooperation among States for protecting the marine environment.[102] More than any other aspects, Part XII of the UNCLOS deals with all sources of marine pollution, including pollution from ships, pollution from land-based sources, pollution from seabed activities and pollution from the atmosphere.[103] Also, this part establishes a framework outlining which states have jurisdiction over vessels that may pollute the marine environment and creates safeguards for vessels accused of polluting.[104]

The most remarkable feature of UNCLOS is that it allows states to establish laws in their maritime zones giving effect to generally accepted international rules and standards established through the competent international organization or general diplomatic conference.[105] With regard to specific pollution control methods, UNCLOS avoided setting specific new standards. Therefore, UNCLOS included references to existing and future regulations of IMO. In this context, the convention was combined with reference requirements such as "*applicable international rules and standards*", "*internationally accepted rules*", "*international rules*" and "*generally accepted international rules and standards*".[106]

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[99] James Harrison, *Making The Law Of The Sea A Study In The Development Of International Law* (1st edn, Cambridge University Press 2011) p. 27

[100] Alan Tan, *Vessel Source Marine Pollution: The Law And Politics Of International Regulation* (1st edn, Cambridge University Press 2005) p. 192

[101] Joanna Mossop, "Can We Make The Oceans Greener? The Successes and Failures of UNCLOS as an Environmental Treaty" (2018) 49 Victoria University of Wellington Law Journal p. 577

[102] Yoshifumi Tanaka, *The International Law Of The Sea* (1st edn, Cambridge University Press 2012) p. 31

[103] Ibid p. 50

[104] Ibid n. 101 p. 577

[105] Ibid n. 61 p. 391

[106] "Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organization" <http://www.imo.org/en/OurWork/Legal/Documents/LEG%20MISC%208.pdf> accessed 8 July 2019.

This reference to "generally accepted" rules and standards is repeated, in varying forms, in Part XII and in other parts of the Convention. These rules of reference have the advantage of automatically incorporating the technical standards set by IMO as these are continuously adopted and amended to keep up with changing circumstances. At the same time, the fact that these rules and standards are referred to by the UNCLOS ensures their pre-eminence over national laws and regulations.[107] To summarise, the UNCLOS contains references that are linked to IMO's standard-setting role. Therefore, with these references to generally accepted international standards, the UNCLOS itself can avoid constant amendment as new environmental standards emerge.[108]

III. OVERVIEW OF THE FLAG STATE AND COASTAL STATE IN THE CONTEXT OF PREVENTION OF VESSEL-SOURCE MARINE POLLUTION

1. Flag State Jurisdiction and Control

1.1. In General

Flag of a ship is a symbol of the nationality of that ship, and jurisdiction over a ship is linked with its nationality. Thus, it can be said that the concept of "flag state" refers to the state that has authority and responsibility over a ship because of this nationality link.[109] Once a ship has been granted the right to fly a state's flag, the flag state has primary jurisdiction to ensure that the ship meets generally accepted international safety, crewing and antipollution standards.[110]

In UNCLOS, the link between the ship's flag and nationality is clearly emphasized. According to Article 91, every State shall fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag. Ships have the nationality of the State whose flag they are entitled to fly.[111] Furthermore, Article 92 states that ships shall sail under the flag of one State only. Accordingly, a ship may not change its flag during a voyage or while in a port of call.[112]

In addition, Article 91 requires that there must be a genuine link between the ship and the state.[113] Notwithstanding, Article 91 does not define the term of genuine link and it does not specify

[107] R. R. Churchill and A. V. Lowe, *The Law Of The Sea* (3rd edn, Manchester University Press 1999) p. 347
[108] Ibid n. 10 p. 93
[109] Yaodong Yu, Yue Zhao and Yen-Chiang Chang, "Challenges To The Primary Jurisdiction Of Flag States Over Ships" (2018) 49 Ocean Development & International Law p. 85
[110] Douglas Bell, "Port State Control v Flag State Control: UK Government Position" (1993) 17 Marine Policy p. 367
[111] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019
[112] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019
[113] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019

what elements constitute a genuine link and how this requirement should be enforced.[114] There is no conclusive, globally accepted definition of the "genuine link". Neither the High Seas Convention nor the UNCLOS nor the United Nations Registration Convention effectively defines what a genuine link is.[115] Moreover, it is not determined what the consequences are if a genuine link is missing.[116]

Flag States have jurisdiction and control rights over their vessels when they are on the high seas, territorial seas or internal waters. However, while exercising its rights, the Flag States have certain duties as well. The UNCLOS includes flag State duties in the domain of safety and also in the domain of prevention and protection of the marine environment.[117]

Duties of flag states are examined detailed in Article 94 of UNCLOS. With reference to Article 94(1), every State shall effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag.[118] Also, Article 94(2) points particular matters in respect of administrative, technical and social matters concerning the ship.

According to Article 94(3), every state shall take such measures for ships flying its flag as are necessary to ensure safety at sea. Specified matters are explained in subparagraphs (a)-(c) of Article 94(3) of the UNCLOS, including those enumerated in Article 94(4). The flag state, in taking measures under paragraphs 3 and 4, is required to conform to generally accepted international regulations, procedures and practices and to take steps necessary to secure their observance.[119] Besides, according to Article 94(7), the flag state shall cause an inquiry to be conducted and cooperate with the other states in the conduct of an inquiry into marine casualties or incidents of navigation.[120]

Additionally, the UNCLOS requires states to protect and preserve the marine environment.[121] According to Article 194(1), states shall take all measures consistent with UNCLOS that are necessary to prevent, reduce and control pollution of the marine environment from any source.[122] In this context, the measures taken by states shall deal with all sources of pollution of the marine environment.[123] Also, UNCLOS explicitly requires states to design measures to minimize vessel-source marine

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[114] Ibid n. 109 p. 86
[115] Camille Goodman, “The Regime For Flag State Responsibility In International Fisheries Law Effective Fact, Creative Fiction, Or Further Work Required?” (2009) 23 Australian and New Zealand Maritime Law Journal p. 160
[116] Tamo Zwinge, “Duties Of Flag States To Implement And Enforce International Standards And Regulations - And Measures To Counter Their Failure To Do So” (2011) 10 Journal of International Business and Law p. 298
[117] Ibid p. 300
[118] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019
[119] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019
[120] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019
[121] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019
[122] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019
[123] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019

pollution. According to Article 194(3)(b), states are required to take measures aimed at preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, as well as regulating the design, construction, equipment, operation and manning of vessels.[124]

UNCLOS requires flag states to formulate national laws for the prevention of vessel-source marine pollution in two articles. Article 211 of the UNCLOS regulates that States shall adopt laws and regulations for the prevention, reduction, and control of pollution of the marine environment from vessels flying their flag or of their registry. Such laws and regulations shall at least have the same effect as that of generally accepted international rules and standards established through the competent international organization or general diplomatic conference.[125]

It should note that Article 211 is the primary provision that regulates pollution from vessels as the prescriptive jurisdiction of flag states under the article applies to the regulation of all types of vessel-source pollution. Furthermore, it can be said that Article 211 vigorously encourages the proliferation of national laws and regulations, as the various paragraphs of the article reference the adoption of laws more than seven times.[126]

UNCLOS Article 217 is the other important article about the prevention of vessel-source marine pollution. According to Article 217, States shall ensure compliance by vessels flying their flag or of their registry with applicable international rules and standards, established through the competent international organization or general diplomatic conference, and with their laws and regulations adopted in accordance with this Convention for the prevention, reduction and control of pollution of the marine environment from vessels and shall accordingly adopt laws and regulations and take other measures necessary for their implementation.[127] It should point out that, this article is particularly important as it provides the jurisdiction for flag states to enforce laws and regulations to ensure compliance by vessels in accordance with laws and regulations adopted by the state.

It is remarkable that the reference to "generally accepted international rules and standards" or “applicable international rules and standards” appear in many parts and articles of the UNCLOS. It is moreover, according to UNCLOS, there is a duty to respect such rules and standards once they are in

[124] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019
[125] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019
[126] Ahmed Adham Abdulla, “Flag, Coastal And Port State Jurisdiction Over The Prevention Of Vessel Source Pollution In International Law: Analysis Of Implementation By The Maldives” (Doctor of Philosophy Thesis, University of Wollongong 2011) p. 83
[127] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 13 July 2019

place.[128] Those "generally accepted international regulations, procedures, and practices" are contained in a variety of international conventions and most of those conventions have been developed by the IMO. Although there is no definition of these expressions in UNCLOS, it is generally acknowledged that the International Convention on the Prevention of Pollution from Ships (MARPOL) is the primary source of international rules governing pollution from vessels.[129]

Flag State jurisdiction over the prevention of vessel-source marine pollution is provided in the main text of MARPOL 73/78 and its six annexes. Each Annexes of MARPOL provides specific regulations about different sources of vessel-source marine pollution. The main text of MARPOL 73/78 provides two general obligations for flag states in these areas. Accordingly, flag states should formulate national laws to give effect to MARPOL 73/78; and they should exercise enforcement jurisdiction to levy legal and administrative sanctions on non-compliant vessels.[130]

In this context, it can be said that MARPOL provides six obligations that flag states are required to enforce over vessels in relation to the prevention of the marine environment from vessel-source pollution. These obligations are; the obligation to regulate accidental discharge or operational discharge of oil from vessels; the obligation to detect unlawful discharges from vessels; the obligation to conduct surveys to ensure that vessels comply with laws on the prevention of pollution; the obligation to issue and endorse shipboard documentation; the obligation to ensure that harmful substances are appropriately packaged, labeled and stowed onboard vessels; and lastly, the obligation to investigate reports of non-compliance by vessels under their registry by other states.[131]

1.2. Genuine Link and Flag of Convenience

According to the UNCLOS, a flag state has the primary audit authority over the ships which fly its flag. Moreover, a flag state has privileged jurisdiction rights to control these ships in the scope of international regulations, procedures, and practices.[132] A flag state is required to take necessary preventions to ensure safety at sea with regard to not only the construction, equipment, and seaworthiness of ships but also the manning of ships, labor conditions and the training of crews. In a similar manner, UNCLOS and other international conventions provide first-hand duties and specific

[128] Ibid n. 116 p. 302
[129] Ibid n. 115 p. 159
[130] Ibid n. 126 p. 86
[131] Ibid n. 126 p. 98
[132] Yoshinobu Takei, “Assessing Flag State Performance in Legal Terms: Clarifications Of The Margin Of Discretion” (2013) 28 The International Journal of Marine and Coastal Law p. 98

rights to the flag state to implement effective enforcements about prevention of vessel-source marine pollution.

Under the light of this information, it is clear that flag states are seen as the principal actor in controlling maritime safety and protecting the marine environment. On the other hand, there is an undeniable sufficiency problem about the jurisdiction and controlling authority of the flag states. It can be said that; the inefficient execution of genuine link and concept of the flag of convenience are the basic reasons for this problem.

As mentioned above, Article 91 UNCLOS regulates the nationality of ships. According to this article, ships have the nationality of the States whose flag they are entitled to fly. In addition, Article 91 requires that there must be a genuine link between the ship and the state.[133] It can be understood from the wording of article 91 that; UNCLOS provides two basic conditions to determine the nationality of ships. Flying flag is the objective condition and it is easy to clarify whether a ship can fulfill this condition. On the other hand, the genuine link is the subjective condition of the nationality of ships, and this one causes legal debates on this issue.[134]

The insufficient specification of the genuine link term causes some missing points about the nationality of ships.[135] For instance, although Article 91 UNCLOS underlines the importance of the genuine link between a state and a ship, not only UNCLOS but also any other related conventions do not demonstrate the conditions of this link.[136] So, however, the existence of the term of the genuine link is very important in the theory, insufficient description of the term reduces the importance of genuine link in practice. Consequently, this neglectful attitude and superficial definition of the genuine link causes law gaps especially about controlling and registration process of the ships.

In connection with the uncertain nature of the genuine link[137], the flag of convenience issue can be shown as the other leading reason of insufficiency problem about the jurisdiction and controlling authority of the flag states. The flag of convenience (FOC) can be defined as The flag of any country allowing the registration of foreign-owned and foreign-controlled vessels under conditions

[133] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 14 July 2019
[134] Vincent P. Coglianti-Bantz, "Disentangling The Genuine Link: Enquiries In Sea, Air And Space Law" (2010) 79 Nordic Journal of International Law p. 402
[135] Ibid n. 100 p. 157
[136] Simon W. Tache, "The Nationality Of Ships: The Definitional Controversy And Enforcement Of Genuine Link" (1982) 16 International Lawyer (ABA) p. 304
[137] Natalie Klein, *Maritime Security And The Law Of The Sea* (1st edn, Oxford University Press 2011) p. 107

which, for whatever reasons, are convenient and opportune for the persons who are registering the vessels.[138] Under the scope of this definition, it can be said that, when a ship owner registers his ship to a flag of convenience, his main concern is not the satisfaction of the genuine link.[139] Even more, the law gaps emerged because of genuine link, create undeniable attractions for the shipowners in the flag of convenience states like low management and registration costs, less discipline and soft registration requirements.[140]

In practice, the ship owners, generally, prefer to fly a flag of convenience to diminish the operating costs. The flag of convenience states allows ship owners to evade national taxation and to avoid qualifications required for the crews of their ships.[141] In so doing, the flag of convenience states give ship owners an opportunity to reduce crew costs by employing inexpensive labor, whilst these states receive a registry fee and an annual fee from ship owners.[142]

Besides, a flag of convenience provides opportunities to the ship owners to register their substandard ships which would not meet the registration terms of rigorous states. There is no restriction in front of the ship owners to move their ships among different open register states.[143] In this context, some ship owners get second-hand ships lower prices, then register these sub-standard ships in the flag of convenience which have more lenient safety regimes.[144] Examination of these examples indicates that in a business environment dominated by the desire to minimize private costs and maximize private revenue, the flag becomes an issue of fiscal advantage.[145]

Because of these advantages, the percentage of the world's merchant fleet operating under FOC registries has continuously increased over the past several decades. United Nations Conference on Trade and Development (UNCTAD) identifies Antigua and Barbuda, Bahamas, Bermuda, Cyprus, Isle of Man, Liberia, Malta, Marshall Islands, Panama, and St. Vincent and the Grenadines as the 10 largest open and international registries in 2007 and together these ten countries flagged 53.7 percent

[138] K. X. Li and J. Wonham, "Registration Of Vessels" (1999) 14 The International Journal of Marine and Coastal Law p. 139
[139] Ibid n. 61 p. 400
[140] Ibid n. 115 p. 159
[141] Aleka Mandaraka-Sheppard, *Modern Maritime Law Volume 2: Managing Risks And Liabilities* (3rd edn, Informa Law 2013) p. 69
[142] Awni Behnam and Peter Faust, "Twilight Of Flag State Control" (2003) 17 Ocean Year Book p. 171
[143] Ibid n. 115 p. 159
[144] Iqbal Fikri, "Flag State Control : An Overview And Its Relationship With Port State Control" (Master of Science, World Maritime University Dissertations 2007)
[145] Z. Oya Özçayır, "Flags Of Convenience And The Need For International Co-Operation" (2000) 7 International Maritime Law p. 111

of the world fleet by deadweight tonnage.[146] It is obvious that most of these are under-developed or developing states and it is not realistic to expect from these states to achieve effective control due to the lack of technical, human or financial resources.

Although it has regulated in both international conventions and UNCLOS that flag states are the primary authority for maritime safety and protection of the marine environment, flag states have failed to fulfill these responsibilities because of the exploitation of genuine link and emergence of convenience flags. With this regard, insufficient specification of the genuine link has caused some missing points about the nationality of ships and in connection with the genuine link, convenience flags have emerged.

As a result, the inability of the flag states to effectively carry out their responsibilities has been important consequences. First of all, the number of substandard vessels has increased rapidly. In connection with this, there have been catastrophic marine accidents that have caused great damage to the marine environment. Therefore the international community has realized that it is unreasonable and ineffective to rely solely on flag states to control marine pollution and substandard ships.

2. Coastal State Jurisdiction and Control

Freedom of the high seas is examined in Article 87 of the UNCLOS. Accordingly, the high seas are open to all States, whether coastal or land-locked. The principle of freedom of high seas includes freedom of navigation, freedom of overflight, freedom to lay submarine cables and pipelines, freedom to construct artificial islands and other installations, freedom of fishing and freedom of scientific research.[147] As the high seas, which are the commonwealth of all humankind,[148] are open to all States and it is not part of the territory of any State, no State may exercise sovereignty or jurisdiction over any part of it.[149] As mentioned earlier, vessels on the high seas, aside from complying with international law, are only subject to the law of its flag State and this is called as flag state jurisdiction.[150]

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[146] Ibid n. 5 p. 6
[147] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019
[148] Xu Weili, "An Analysis Of Coastal State Jurisdiction On Preventing Vessel-Source Pollution" (2007) 1 China Oceans Law Review p. 396
[149] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019
[150] Sondre Torp Helmersen, "The Sui Generis Nature Of Flag State Jurisdiction" (2015) 58 Japanese Yearbook of International Law p. 319

Under the principle of freedom of the high seas, the coastal State jurisdiction only extends to its territorial seas. UNCLOS Article 2 states that sovereignty of a coastal State extends, beyond its land territory and internal waters and, in the case of an archipelagic state, its archipelagic waters, to an adjacent belt of sea, described as the territorial sea.[151] Furthermore, the coastal state is exercising a quasi-territorial jurisdiction in the contiguous zones, exclusive economic zones, and continental shelf.[152] In this context, UNCLOS gives to the coastal state sovereign rights in varying degrees over the different zones of the sea. These zones are; internal waters, territorial sea, contiguous zone, exclusive economic zone, and the high seas.[153]

According to UNCLOS Article 8, waters on the landward side of the baseline of the territorial sea form part of the internal waters of the State.[154] A state has full sovereignty over its internal waters. Waters lying wholly inside its territory (lakes, rivers, canals, internal seas, internal straits, internal bays, mouths of rivers and ports) also have the status of internal waters.[155] Foreign vessels cannot navigate in a State's internal waters without permission, except in case of distress. A foreign vessel, located in internal waters, is subject to the legislative, administrative, judicial and jurisdictional powers of the coastal State.[156]

The coastal State exercises almost full competence in the territorial sea according to UNCLOS. On the other hand, the right of the coastal state to adopt environmental laws for ships in its internal waters is limited.[157] The principal limitation on the sovereignty of the coastal state in the territorial sea is the right of innocent passage of foreign vessels. Foreign vessels enjoy the right of innocent passage in territorial seas. So, coastal states may only take the necessary steps in its territorial sea to prevent passage which is not innocent.

UNCLOS Article 17 provides that ships of all states, whether coastal or land-locked, enjoy the right of innocent passage through the territorial sea.[158] Therefore, the coastal state should not impede the innocent passage of foreign ships while exercising its jurisdiction. In other words, coastal states

[151] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019
[152] Ibid n. 148 p. 398
[153] Anne Bardin, “Coastal State's Jurisdiction Over Foreign Vessels” (2002) 14 Pace International Law Review p. 29
[154] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019
[155] Ibid n. 78 p. 185
[156] Ibid. n. 153 p. 30
[157] Henrik Ringbom, “Environmental Protection and Shipping - Prescriptive Coastal State Jurisdiction in The 1990's” 1996 Scandinavian Institute of Maritime Law Yearbook p. 21
[158] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019

may not intervene in the innocent passage of foreign ships legally unless there is clear objective evidence of enough serious illegal acts.[159]

The concept of the right of innocent passage is of key importance to coastal state jurisdiction over vessel-source pollution.[160] According to UNCLOS, a passage is innocent so long as it is not prejudicial to the peace, good order or security of the coastal State. Also, Article 19 lists activities that considered being prejudicial to the peace, good order or security of the coastal State.[161] UNCLOS allows coastal states to adopt laws and regulations, in conformity with the provisions of UNCLOS and other rules of international law.[162]

The contiguous zone is a zone adjacent to the seaward side of the territorial sea, not extending beyond 24 nautical miles measured from the baselines.[163] As the contiguous zone can overlap with an Exclusive Economic Zone (EEZ), foreign ships enjoy therein in principle the same high seas freedom of navigation.[164] On the other hand, the coastal states may exercise the control necessary to prevent infringement of its customs, fiscal, sanitary or immigration laws and regulations. Further, the coastal State may punish infringement of the aforementioned laws and regulations committed within its territory or territorial sea.

The EEZ is an area beyond and adjacent to the territorial sea, subject to the specific legal regime, under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of UNCLOS.[165] The EEZ shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.[166] Within its exclusive economic zones, the coastal State has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources. Moreover, coastal states have exclusive jurisdiction with regard to artificial islands, installations and structures, marine scientific research and the protection and preservation of the marine environment.[167] According to the UNCLOS, foreign vessels sailing in this area and enjoying the freedom of navigation shall comply with

[159] Ibid n. 148 p. 397
[160] Ibid n. 78 p. 197
[161] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019
[162] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019
[163] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019
[164] Ibid n. 79 p. 275
[165] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019
[166] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019
[167] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 17 July 2019

the coastal States' laws and regulations, generally accepted international regulations, procedures for safety at sea and the prevention, reduction, and control of pollution from ships.[168]

As mentioned, coastal states may adopt laws and regulations concerning the protection of the coastal state's environment and the prevention, reduction, and control of marine pollution, but these laws and regulations shall not hamper the innocent passage of foreign ships through territorial seas except when the ships intentionally or actually cause major harmful pollution. With this regard, UNCLOS Article 220 regulates the enforcement power of coastal states to prevent and control of marine environment from vessel-source pollution.

According to Article 220, a coastal state may institute proceedings in respect of any violation of its laws and regulations adopted for the prevention, reduction, and control of pollution from vessels when the violation has occurred within the territorial sea or the exclusive economic zone of that state. Article 220(2) states that where there are clear grounds for believing that a vessel navigating in the territorial sea of a State has violated laws and regulations of that State or applicable international rules and standards for the prevention, reduction, and control of vessel-source pollution, that State may undertake physical inspection of the vessel relating to the violation and may, where the evidence so warrants, institute proceedings in accordance with its law.

Article 220(2) is concerned with a situation when a foreign ship sailing in territorial seas violates the coastal State's laws and regulations relating to vessel-source pollution. The ship still enjoys the right of innocent passage; however, it is subject to enforcement of special measures from the coastal State, including physical inspection of the ship, institute proceedings and detention of the vessel. In other words, if the exercise of the innocent passage is suspected of violating laws, the coastal State has the right to interfere with the passage of the foreign ship after the reasonable examination.[169]

All in all, although the pre-1982 system was based largely on flag state exclusivity, The UNCLOS brought fundamental changes. With this regard, coastal states received extensive and well-defined powers particularly in their territorial sea and exclusive economic zone.[170] On the other hand, it can be said that the right of innocent passage and principle of freedom of high seas erode the

[168] Ibid n. 148 p. 398
[169] Ibid n. 148 p. 401
[170] Erik Franckx, "Vessel-Source Pollution And Coastal State Jurisdiction: General Framework" (1999) 24 South African Yearbook of International Law p. 9

effectiveness of coastal state jurisdiction and control in the context of prevention of vessel-source marine pollution.

As mentioned, Article 17 of UNCLOS states that ships of all states enjoy the right of innocent passage through the territorial sea. Therefore, the coastal state should not impede the innocent passage of foreign ships while exercising its jurisdiction. So, the powers of a coastal state are limited only to prevent passage which is not innocent. In this respect, if a foreign vessel uses the territorial sea for innocent passage, a coastal state cannot stop or inspect this vessel which acts in harm to the marine environment during navigation in the high seas.

In addition, UNCLOS Article 220 which regulates the enforcement power of coastal states limits coastal states' rights to undertake physical inspection and detention of the vessel. In this context, coastal states can only enforce their powers where there are clear grounds for believing that a vessel navigating in the territorial sea of a State has violated laws and regulations of that State or applicable international rules and standards for the prevention, reduction, and control of vessel-source pollution.

The coastal states can exercise their powers over foreign ships only where there are clear grounds to believe prevents coastal states from exercising regular control over foreign ships. Coastal states should be careful when exercising such authority and should not exceed reasonable limits. In other words, reasons should be serious enough to require the coastal state to impede the navigation of a foreign vessel. Otherwise, it would result in the coastal states impede foreign vessels' right to innocent passage, even if there are no proper reasons.

Moreover, to exercise the authority under this article, foreign vessels must be in the territorial sea of the coastal state. In case the foreign ship leaves the territorial sea, it is not possible for the coastal state to exercise authority according to this article. Consequently, it is possible to say that, coastal states' authority over foreign vessels is limited and like flag states, coastal states are insufficient to combat vessel-source marine pollution.

IV. PORT STATE JURISDICTION AND CONTROL IN THE CONTEXT OF PREVENTION OF VESSEL-SOURCE MARINE POLLUTION

1. In General

Under international maritime law, the authority with the greatest degree of legal control over an individual ship is the flag state administration.[171] Therefore, the flag state is expected to enforce applicable international rules and standards concerning the safety of ships and persons on board, as well as the prevention of marine pollution.[172] Besides, flag states must ensure that ships registered within their jurisdiction are adequately managed and operated. In this context, it can be said that the primary responsibility for regulating pollution from ships rests with the flag state.[173]

On the other hand, particularly from the second part of the 20th century, it has become clear that several flag states are either unable or unwilling to take the necessary action to discharge their duties. Thus, many of the vessels registered are old and substandard because of the emergence of open registries more commonly known as flags of convenience.[174] Furthermore, it was understood that the coastal states, which were given implementation powers to balance this situation, were insufficient.

The failure of all these tiers of control and the inadequacy of flag state authority has triggered a shift of emphasis from flag state authority to port state authority to eliminate the threat of sub-standard ships and to prevent vessel-source marine pollution.[175] As a result of this shift, the international community and conventions have accepted that the port state can use the authority to verify whether foreign-flagged vessels comply with relevant international conventions.[176]

Today, the port States have a major role to play in combating sub-standard vessel operations and reducing vessel-source marine pollution.[177] However, it should point out that the port states are never considered as the first line of defense for eliminating sub-standard ships and preventing vessel-source marine pollution but a supplement to what some flag States fail to achieve.[178] With this regard,

[171] Ambrose Rajadurai, "Regulation of Shipping: The Vital Role Of Port State Control" (2004) 18 Australian and New Zealand Maritime Law Journal p. 85
[172] Aminuddin Md Arof and Muhammad Helmi Zulkifly, "The Effectiveness of Port State Control Regime On Bulk Shipping" (2012) 3 MIMET Technical Bulletin p. 1
[173] Ho-Sam Bang, "Is Port State Control an Effective Means to Combat Vessel-Source Pollution? An Empirical Survey of The Practical Exercise By Port States Of Their Powers Of Control" (2008) 23 The International Journal of Marine and Coastal Law p. 715
[174] Ademuni Odeke, "Port State Control And UK Law" (1997) 28 journal of Maritime Law and Commerce p. 657
[175] Ibid p. 659
[176] Ibid n. 173 p. 719
[177] Ibid n. 126 p. 144
[178] Shiming Xu, "Port State Control : Review And Assessment" (Master of Science, World Maritime University 2001) p. 2

port states make significant contributions to ensure compliance with international regulatory efforts by complementing the flag state's responsibility for its ships.[179]

2. Port State Jurisdiction and Control

The port state authority over foreign-flagged vessels consists of two separate legal powers. These powers are Port State Control (PSC) and Port State Jurisdiction (PSJ). Although these powers are closely related, there are some differences. In this respect, these powers should be examined first to understand the port state authority on foreign-flagged vessels.

Port State Control (PSC) provides the port state the authority to inspect and detain -if it is necessary- a vessel flying a foreign flag. The purpose of PSC is to ensure that vessels comply with all applicable international safety at sea instruments and local legal maritime safety requirements.[180] More specifically, the PSC verifies whether a foreign vessel's documentation and the vessel itself comply with international rules and standards as well as national laws relating to the safety of ships and protection of the marine environment.[181]

The PSC limits the port state to take an administrative measure of control, such as detaining a ship in port until various corrective measures have been taken or ordering it to proceed to the nearest shipyard for repairs. In this case, the port state does not prosecute the vessel for an alleged breach of its legislation.[182]

On the other hand, Port State Jurisdiction (PSJ) concerns the port state's power to prosecute ships and to impose fines on them for violation of international rules and standards. PSJ is not limited to the prosecution of crimes committed in its ports or coastal state maritime zones, it also concerns prosecution for crimes committed beyond the maritime regions of the state.[183]

It should note that PSC is an integral part of and complement of PSJ. The effectiveness of PSJ is dependent on the effectiveness of PSC. PSC and PSJ have nested concepts so it is not possible to consider these concepts independently from each other. Broadly, PSC and PSJ can name

[179] Erik Jaap Molenaar, "Port State Jurisdiction: Toward Comprehensive, Mandatory And Global Coverage" (2007) 38 Ocean Development and International Law p. 226
[180] John Hare, "Port State Control: Strong Medicine To Cure A Sick Industry" (1997) 26 The Georgia Journal of International and Comparative Law p. 571
[181] Ibid n. 173 p. 720
[182] Ho-Sam Bang, "Port State Jurisdiction and Article 218 Of The UN Convention On The Law Of Sea" (2009) 40 Journal of Maritime Law & Commerce p. 292
[183] Ibid n. 173 p. 717

together as the port state authority which exercises exclusive and complete jurisdiction within internal waters.[184] Therefore, in this chapter, PSJ and PSC are examined together as the port state authority.

2.1. The entrance of Foreign Vessels to the Port

The first reflection of the port state authority over foreign-flagged vessels can be seen on the entrance to the ports. A port state may regulate the entry conditions of foreign vessels to its ports, and may not allow the entry of sub-standard vessels[185]as they may pose a threat to the marine environment.[186] This principle is based on the sovereignty of the coastal state to regulate accession to its ports, specified in the Nicaraguan Case.[187] Thus, it can be said that under international law and case law, foreign ships do not have a general right of access to ports. Further, a port state can deny access to its ports and impose what conditions it thinks reasonable on foreign vessels seeking access to a port.[188]

This principle is clearly stated both in MARPOL and UNCLOS. According to Article 5(3) of MARPOL, if a foreign vessel does not comply with the MARPOL, a state may deny it from entering its internal waters or a port under its jurisdiction. In this situation, the state shall immediately inform the consul or diplomatic representative of the party-state whose flag the ship is entitled to fly, or if this is not possible, the administration of the ship concerned.[189]

Similarly, UNCLOS Article 211(3) provides that port states may establish national requirements for the prevention, reduction, and control of pollution of the marine environment as a condition for the entry of foreign vessels into their ports or internal waters.[190] Further, States may determine to cooperate and adopt cooperative arrangements on this issue. The states that determine the conditions of entry to the port should bring the necessary publicity to these conditions. If more than one state sets conditions to harmonize its policies, it must notify to the competent international organization which states have participated in such cooperation.

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[184] Ho-Sam Bang, "Recommendations For Polices On Port State Control and Port State Jurisdiction" (2013) 44 Journal of Maritime Law & Commerce p. 115

[185] Ibid n. 182 p. 292 "Ships not complying with the minimum standards contained in international maritime conventions and posing a significant risk of harm to seafarers on board; to other ships; and to the marine environment have been termed sub-standard ships"

[186] Ibid n. 126 p. 151

[187] Case Concerning Military and Paramilitary Activities in and Against Nicaragua (Nicaragua v. United States), 1986 I.C.J. Rep. 14, 111

[188] Ted L. McDorman, "Port State Enforcement: A Comment On Article 218 Of The 1982 Law Of The Sea Convention" (1997) 28 Journal of Maritime Law and Commerce p. 310

[189] <http://www.marpoltraining.com/MMSKOREAN/MARPOL/intro/a5.htm> accessed 23 July 2019

[190] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 23 July 2019

Besides, port states have the right to take “necessary steps” to prevent a breach of port entry conditions by vessels. In this context, UNCLOS Article 25(2) states that in the case of ships proceeding to internal waters or a call at a port facility outside internal waters, the State also has the right to take the necessary steps to prevent any breach of the conditions to which admission of those ships to internal waters or such a call is subject.[191]

As a result, Article 211(3) and Article 25(2) represent customary international law reaffirming the right of the port State to control access to its ports within the framework of the UNCLOS.[192] Thus, a foreign vessel must first comply with the rules of the state in which it registers, and then with the rules of the state in which it enters the territorial sea, and finally with the state to which it enters its port. Therefore, a foreign vessel that can avoid the control of the flag state and the coastal state, subject to the third inspection with the requirements of the port state regarding the entrance to the port.

With this regard, the port state is authorized to make national arrangements in all matters related to entry to ports and to request the ships in the port to comply with these regulations. Moreover, the phrase "cooperative arrangements" in this article should be considered to point to a regional memorandum of understanding on port state control.

2.2. In-Port Enforcement of the Port States

The second reflection of the port state authority over foreign-flagged vessels can be seen on the in-port enforcement of the port states. Under international law, port states may undertake enforcement measures for the prevention of marine pollution from vessels visiting their ports. In this context once a foreign vessel voluntarily enters into a port of a state, that vessel becomes subject to the laws and regulations of the host state irrespective of whether those laws and regulations are based upon treaties to which the flag state of the visiting vessel is also a party.[193]

According to UNCLOS in-port enforcement of port states can be territorial and extra-territorial. As a port is part of a State's territory, the port state can exercise such jurisdiction as it would be able to exercise in any part of its territory.[194] Because of its territorial sovereignty, customary international law

[191] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 23 July 2019
[192] Ibid n. 182 p. 294
[193] Ted L. McDorman, “Port State Control: A Comment on the Tokyo Mou And Issues Of International Law” (1997) 7 Asian Yearbook of International Law p. 233
[194] Ted L. McDorman, “Regional Port State Control Agreements: Some Issues Of International Law” (2000) 5 Ocean and Coastal Law Journal p. 210

acknowledges a port state's wide discretion in exercising jurisdiction over its ports.[195] Moreover, the port state can exercise extra-territorial jurisdiction on vessels either based on a treaty provision or in any way a state is allowed to exercise extra-territorial jurisdiction.[196] It should be noted that with regard to violations committed by vessels prior to entry, port states can rely on their extra-territorial jurisdiction based on the area the violations took place.[197]

While port state enforces its territorial or extraterritorial jurisdiction, port state control (PSC) can be deemed as the first step of this action. With this regard, PSC is an important instrument for verifying that vessels comply with the technical or other requirements of international regulatory conventions, such as MARPOL.[198]

According to Article 6(2) of MARPOL, a port state may inspect a ship for the purpose of verifying whether the ship has discharged any harmful substances in violation of the provisions of the regulations.[199] The fact that the ship inspected by the port state has valid certificates is considered as an indication that the ship meets international standards. If the vessel does not have a certificate or if the existing certificate is not valid, the port state has the right to carry out full port state control inspection.

UNCLOS, like MARPOL, states that port states may inspect a foreign vessel's records or other documents which the vessel is required to carry on the basis of generally accepted international rules and standards. According to UNCLOS, port state control is limited to the inspection of records and documents.[200] Further physical inspection of the vessel may be undertaken only when if there are clear grounds for believing that the condition of the vessel or its equipment does not correspond substantially with the particulars of those documents; if the contents of such documents are not sufficient to confirm or verify a suspected violation; and if the vessel is not carrying valid certificates and records.

In the context of in-port enforcement of the port states, Article 218 of UNCLOS provides the most comprehensive regulations on vessel-source marine pollution. Although the existing general

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[195] Ibid n. 179 p. 228
[196] Sophia Kopela, "Port-State Jurisdiction, Extraterritoriality and The Protection Of Global Commons", *10th Anniversary Conference of the European Society of International Law* (ESIL Law of the Sea Interest Group 2014) p. 11
[197] Ibid n. 18 p. 228
[198] Ibid n. 126 p. 165
[199] <http://www.marpoltraining.com/MMSKOREAN/MARPOL/intro/a5.htm> accessed 23 July 2019
[200] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 23 July 2019

basis of jurisdiction is that port State enforcement jurisdiction only takes place within the port, Article 218 is considered to be truly innovative given that it goes beyond any existing general basis for jurisdiction in international law.[201]

In the international system, where the authority balances have changed in favor of the port state, Article 218 is an important reflection of this change. The port state authority, which is developed because flag states do not use their regulatory and enforcement powers effectively on their own ships, can be considered an important innovation in terms of allowing port states to use authority even if they are not adversely affected by violations.

Article 218 of UNCLOS is designed to provide the port State with greater powers to enforce applicable international law against visiting foreign vessels for pollution offenses that have taken place on the high seas or in other States' waters. So Article 218 authorizes the port state to investigate a violation irrespective of where a violation has been committed. The purpose of this article is to combat vessel-source marine pollution more effectively by extending the control and judicial powers of the port state to a wider area.

According to Article 218(1), a port state may investigate any discharges outside its internal waters, territorial sea or exclusive economic zone when a vessel is voluntarily within a port or at an off-shore terminal of that State. Port State's investigation may conduct in the context of applicable international rules and standards established through the competent international organization or general diplomatic conference.[202] These rules include the discharge standards contained in the Annexes to MARPOL 73/78 (Annex I, Regulation 8A; Annex II, Regulation 15; Annex III, Regulation 8; Annex V, Regulation 8)[203], which have achieved the level of "generally accepted" as well as other rules and standards that are applicable in the mutual enforcement relationship of the states concerned.[204]

In order for the port state to exercise authority according to this article, the vessel must be at the port or in the off-shore terminal voluntarily. The port state does not need to be affected by the discharge of a foreign vessel in order to exercise its authority. Although Article 218(1) regulates the

[201] Ibid n. 182 p. 298
[202] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 23 July 2019
[203] Ould Mohamed Ahmedou, “Evaluation Of Port State Control Memorandums Of Understanding : Lessons To Be Learnt In Order To Establish An Effective PSC In West And Central Africa” (Master of Science, World Maritime University 2000) p. 10
[204] Ibid n. 179 p. 235

enforcement authority of the port state basically, it also includes the authority of the port state to regulate discharge violations in high seas or off-shore terminals of another state. In this case, it is possible for a coastal state to apply to a port state for a discharge violation in high seas that adversely affects its the marine areas and to request from the port state to exercise its authority.[205] This can be deemed as a significant indication of the shift from flag state authority to port state authority.

Also, Article 218(2) provides that a state shall not institute a proceeding in respect of a discharge violation in the internal waters, territorial sea or exclusive economic zone of another State unless requested by that State, the flag State, or a State damaged or threatened by the discharge violation. Accordingly, when the discharge violation occurs in the sea areas of another state, the port state is not able to exercise authority unless it is affected by pollution. In order for the port state to exercise any authority, the relevant states must have a request in this direction. On the other hand, the last sentence of this provision shows the exception. Accordingly, a port state can institute a proceeding if the violation has caused or likely to cause pollution in the internal waters, territorial sea or exclusive economic zone of that state. Since the violation constitutes pollution or pollution threat in the sea areas of the port state, in other words, since the port state and the coastal state are the same states, no demand condition is required. Port State can institute proceedings without any request if it is damaged or threatened by the violation.

Article 218(3) stipulates that the port state comply with requests from both the flag State and any state in whose maritime zones a discharge violation is believed to have occurred. Moreover, a port state shall likewise comply with requests from the flag State for investigation of such a violation, irrespective of where the violation occurred. Accordingly, a coastal state may request an investigation from the port state if it believes that the discharge violations occurring in its internal waters, territorial seas or exclusive economic zones are damaging or threatening these marine areas.

The port state shall comply with these requests to the as far as practicable. It should note that the phrase "as far as practicable" in the article erodes the implementation power of the article since this phrase means that the port state is not bound by these requests. However, this regulation, albeit, in theory, demonstrates the new and indispensable role of the port states in the prevention of vessel-

[205] M. A. Stephenson, “Vessel-Source Pollution Under The Law Of The Sea Convention - An Analysis Of The Enforcement Standards” (1993) 17 University of Queensland Law Journal p. 273

source marine pollution. By this article, the port state is recognized as the last safety net concerning the discharge violations.

Lastly, according to Article 218(4) records of the investigation carried out by a port State shall be transmitted upon request to the flag State or the coastal State. Any proceedings instituted by the port State based on such an investigation may be suspended at the request of the coastal State when the violation has occurred within its internal waters, territorial sea or exclusive economic zone. The evidence and records of the case shall be transmitted to the coastal State. Such transmittal shall preclude the continuation of proceedings in the port State.

Although this article seems to limit the implementation power of the port states, this consideration is not true as the main purpose is to combat vessel-source marine pollution more effectively. Rather, it can be said that the transmission of the investigation to the state in which violation occurred or to the flag State of the vessel makes the investigation more efficient.

In summary, UNCLOS provides detailed provisions about the in-port implementation of the port states in article 218. Accordingly, a vessel is completely under the authority of port state when it is voluntarily within a port or at an off-shore terminal of that state. The marine pollution caused by this vessel during the voyage can be investigated by the port state regardless of where it occurs. Thus, coastal states that have suffered from pollution may demand from the port state to investigate the vessel after they have noticed the pollution. In this case, it would be a much more effective solution to demand the port state to investigate the vessel instead of flag states that do not fulfill their responsibilities or are reluctant to do so. In this way, the port state authority has emerged as a new alternative to preventing vessel-source marine pollution, apart from the one-handed responsibility of the flag state.

2.3. The Departure of Foreign Vessels from Port

The third reflection of the port state authority over foreign-flagged vessels can be seen on the departure from ports. The departure right of a foreign vessel from a port is tied to the penalties imposed by port state or the court orders that may arise from commercial disputes. International law does not prohibit these enforcement measures arising from commercial disputes against foreign

vessels.[206] On the other hand, UNCLOS Article 219 imposes an obligation upon port states to regulate administrative measures for the prohibition of navigation of ships which do not comply with international rules and standards and have the potential to damage the marine environment.[207]

In this context, Article 219 states that port states shall take administrative measures to prevent the vessel which is in violation of applicable international rules and standards relating to the seaworthiness of vessels from sailing. In this situation, states can only allow the ship to move to the nearest appropriate repair yard and do not allow the ship to move until the reasons for the violation have been eliminated.[208] Although the authority of the port state to take administrative measures to prevent the sailing of the ship is envisaged as a “liability" in the article, port states oblige to take administrative measures “as far as practicable”.

Similarly, UNCLOS Article 226(1)(c) provides that a port state may refuse the departure of a vessel whenever it would present an unreasonable threat of damage to the marine environment. The other option of the port state is to make the vessel's departure conditional. Accordingly, the unseaworthy vessel can only proceed to the nearest appropriate repair yard to eliminate its deficiencies. If the release has been refused or made conditional, the flag State of the vessel must be promptly notified.

It should emphasize that in Article 219, the powers of the port state are limited as administrative measures. In this respect, administrative measures are intended to mean measures such as the detention before the ship is allowed to go to the nearest repair shipyard. However, concluding that the term administrative measures do not include prosecution does not mean that administrative measures are a less effective means of implementation. On the contrary, this administrative power of the port states enables port states much more powerful in the context of the prevention of vessel-source marine pollution.

As a result, both provisions are crucial for the prevention of vessel-source marine pollution. Since these provisions give administrative power to the port states to take preventive measures before a violation occurred, an unseaworthy vessel cannot depart from the port without removing its deficiencies. This authority given to the port state has a significant deterrent power over the ship

[206] Ibid n. 194 p. 234
[207] Ibid n. 126 p. 174
[208] <https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf> accessed 24 July 2019

owners who do not want to suffer financial losses due to delays. In this respect, these administrative provisions strengthen the port states' enforcement authority.

3. Regional Port State Control Agreements

3.1. In General

Although it recognized in international law that the port states have control and jurisdiction authority over the foreign-flagged vessels which voluntarily being at their ports, at the beginning the port states were reluctant to use these authorities because of the economic reasons. The fact that foreign-flagged vessels preferred flexible port authority rather than strict port authority led to competition between different port states and this competition caused the more flexible implementation of international laws.[209]

On the other hand, some catastrophic oil tanker accidents created a demand for cooperation or regional approach to encourage port states to enhance the enforcement of international laws against visiting vessels. Following these developments, some European countries convened in Paris together with the International Maritime Organization (IMO) and the International Labor Organization (ILO) in 1980. At this meeting, it was agreed that coordination between port states and the implementation of generally accepted international conventions were necessary for the elimination of substandard vessels and the prevention of vessel-source marine pollution.

As a result of these initiatives, Paris Memorandum Of Understanding (MOU) on Port State Control was adopted and signed by the maritime authorities of the fourteen states in January of 1982 in Paris.[210] Through the Paris MOU, a regional group of port states, who were parties to the relevant maritime conventions, exercised regular and systematic control of ships entering their ports for the first time.[211]

The Paris MOU has been a model for all other regional agreements. Paris MOU was followed a decade later by the 1992 Latin American Agreement on Port State Control. Then Tokyo Port State Control MOU (1993), Caribbean Port State Control MOU (1996), Mediterranean Region Port State

[209] Ibid 194 p. 234
[210] Z. Oya Özçayır, *Port State Control* (2nd edn, Informa Law from Routledge 2004) p. 122
[211] Z. Oya Özçayır, "The Use Of Port State Control In Maritime Industry And The Application Of The Paris MOU" (2008) 14 Ocean and Coastal Law Journal p. 210

Control MOU (1997) came into effect.[212] The Indian Ocean MOU, the Abuja MOU, the Black Sea MOU, and the Riyadh MOU were established in the following years.[213]

Before the examination of Paris MOU, it should note that MOUs are not international conventions, but administrative agreements with the cooperation between related authorities of party states.[214] With this regard, MOUs require the use of international instruments that are legally binding for states. Therefore, they do not set any new standards or enforce any requirements on foreign vessels above the international convention requirements.[215]

The main mission of MOUs is to eliminate the operation of substandard ships to prevent the marine environment from vessel-source marine pollution, through a harmonized system of port State control.[216] MOUs aim to ensure that all ships operating in their region meet international standards. Thus, it was aimed to prevent marine pollution caused by vessels by providing regional standards.

Besides, according to the basic principles of MOUs; shipowners and operators are ultimately responsible for compliance of vessels with the requirements expressed in international maritime conventions. Moreover, each maritime authority must give effect to the provisions of the relevant MOUs and each authority must ensure that foreign merchant ships visiting its ports comply with the standards articulated in the relevant conventions.

3.2. Inspection of Vessels under Paris MOU (1982)

UNCLOS provides that port states may establish national regulations for the prevention, reduction, and control of pollution of the marine environment as a condition for the entry of foreign vessels into their ports or internal waters. According to UNCLOS, port states have the right to take “necessary steps” to prevent a breach of port entry conditions by vessels. Further, States may determine to cooperate and adopt cooperative arrangements on this issue. With this regard, UNCLOS encourages the harmonization of policies and the establishment of cooperative arrangements at the regional level to overcome the disadvantages flowing from the exercise of port state control by individual governments.

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[212] Ibid n. 194 p. 236
[213] Ho-Sam Bang and Duck-Jong Jang, “Recent Developments In Regional Memorandums Of Understanding On Port State Control” (2012) 43 Ocean Development & International Law p. 171
[214] Ibid n. 211 p. 210
[215] Ibid n. 210 p. 123
[216] <https://www.parismou.org/about-us/organisation> accessed 28 July 2019

MOUs are established to fulfill this aim of UNCLOS. MOUs, as mentioned, are administrative agreements in the framework of cooperation between the marine authorities of the state parties. MOUs require the use of international instruments that are legally binding for states. The provisions of the MOUs envisage the application of investigations, inspections, and detentions against all ships to identify deficiencies that may cause serious damage to the marine environment.[217]

Although MOUs were established in different times and regions it can be said that all the port state control arrangements are substantively similar and follow the model of the 1982 Paris Port State Control MOU.[218] Therefore, the inspection procedures and detention methods of the Paris MOU should be examined as an example of all MOUs.

Under the Paris MOU, various internationally accepted conventions, which are referred to as "relevant instruments" listed in Section 2 of the Paris MOU, shall be enforced by state parties.[219] Besides, each member state authority commits itself to the enforcement regime for port state control and undertakes to comply with commitments in Section 1 of MOU. Accordingly, each state will give effect to the provisions of the present Memorandum and the Annexes. Each state will maintain an effective system of port state control without discrimination as to flag. Each state will inspect every foreign merchant ships. Each state will consult, cooperate and exchange information with the other states to further the aims of the Memorandum.[220]

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[217] Tatjana Keselj, "Port State Jurisdiction In Respect Of Pollution from Ships: The 1982 United Nations Convention On The Law Of The Sea And The Memoranda Of Understanding" (1999) 30 Ocean Development and International Law p. 142

[218] Ibid n. 194 p. 236

[219] "Paris MOU Section 2" "Relevant Instruments" : The International Convention on Load Lines 1966 (LOAD LINES 66); the Protocol of 1988 relating to the International Convention on Load Lines 1966 (LL PROT 88); the International Convention for the Safety of Life at Sea, 1974 (SOLAS); the Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974 (SOLAS PROT 78); the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974 (SOLAS PROT 88); International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, and as further amended by the Protocol of 1997 (MARPOL); the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW 78); the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG 72); the International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE 69); the Merchant Shipping (Minimum Standards) Convention, 1976 (ILO Convention No. 147) (ILO 147);the Protocol of 1996 to the Merchant Shipping (Minimum Standards) Convention, 1976 (ILO Convention No. 147) (ILO P147); the Maritime Labour Convention, 2006 (MLC, 2006); the International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC1969); Protocol of 1992 to amend the International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC PROT 1992); International Convention on the Control of Harmful Anti-Fouling Systems on Ships, 2001 (AFS2001); the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001; the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM) <https://www.parismou.org/system/files/Paris%20MoU%2C%20including%2041st%20amendment.pdf> accessed 29 July 2019

[220]<https://www.parismou.org/system/files/Paris%20MoU%2C%20including%2041st%20amendment.pdf> accessed 29 July 2019

The inspection procedure under Paris MOU consists of a visit onboard a ship to check the certificates and documents relevant for the Memorandum.[221] In addition to document inspection, several areas of the ship, including the engine room and the hygienic condition of the ship, must be inspected under the certificates that the ship must comply with.[222] In the absence of valid certificates or documents, or if there are clear grounds for believing that the condition of a ship or its equipment or its crew does not substantially meet the requirements of a relevant instrument, a more detailed inspection should be carried out.[223]

The Paris MOU provides detailed guidelines about the detention of vessels. The prime purpose of detention is to ensure rectification of defects in the vessels. In this context, appropriate action may be taken which may include detention or stopping the ship from continuing operation because of established deficiencies which, individually or together, would render the continued operation hazardous.[224] In the situation of detention, relevant authority should immediately inform the master of the ship.[225] The owner or operator has the right to appeal against a detention decision taken by the port state authority. An appeal will not cause a suspension of the detention. In any instance of alleged undue detention or delay, the burden of proof shall lie with the owner or operator of the ship.[226] It should note that related port state authority releases a detained ship if only deficiencies of the ship are properly rectified. In cases where some repairs cannot be carried out in the port of detention, the ship may be allowed to proceed to a repair yard.[227]

The most distinctive feature of the Paris MOU is facilitating the exchange of information among member states, regarding the history of vessels, the result of inspections, as well as information on the sub-standard vessels. Such information is vital as the detention of vessels is an increasingly significant issue for port states.[228] Further, the publication of information allows the brokers, insurers, consumers, and passengers to know which ships have been detained and why.[229] For this reason, the exchange of information has become the most effective and deterrent feature of

[221] Kiehne Gerhard, "Investigation, Detention And Release Of Ships Under The Paris Memorandum Of Understanding On Port State Control: A View From Practice" (1996) 11 International Journal of Marine and Coastal Law p. 222
[222] Ibid n. 211 p. 225
[223] Ibid n. 221 p. 222
[224] Ibid n. 180 p. 580
[225] Ibid n. 211 p. 233
[226] Ibid n. 210 p. 222
[227] Ibid n. 211 p. 234
[228] Ibid n. 116 p. 157
[229] Ibid n. 180 p. 580

the regional port state control agreements in the combat against substandard ships and vessel-source marine pollution.

As a result, the Paris MOU, with its milestone innovations, has become the leading regional cooperation initiative on port state control and has been a model for all other regional agreements. With the Paris MOU, a regional group of port states has started to perform regular and systematic control of ships entering their ports for the first time. The MOUs, under the guidance of the Paris MOU, have defined the relevant international instruments for the operation of the regime, specified common reporting, inspection and detention requirements, and procedures impose information-sharing requirements and specified the organizational structure and amendments process.

Eventually, the establishment and dissemination of MOUs ensure that foreign-flagged vessels include in a detailed control mechanism that does not change from port to port. Thus, a preventive control of the vessels with the potential to damage the marine environment realizes in practice and this is one of the most important developments emphasizing the power and significance of port state authority.

4. Evaluation of Port State Authority in the context Prevention of Vessel-Source Marine Pollution

Under international law and maritime conventions, it is recognized that flag states have primary authority over ships carrying their flags. This authority gives to the flag states, the responsibility of checking whether ships carrying their flags comply with international standards on marine environment and safety.

Although it has been accepted that flag states are the primary authority for maritime safety and protection of the marine environment, flag states have failed to fulfill their responsibilities because of the misuse of genuine link and emergence of convenience flags. Besides, because of the critical weakness in the system that the IMO itself does not have the authority to impose its conventions, well defined legal framework for flag state authority has not been implemented at the desired level. At the same time, the fact that shipowners benefit from moving their vessels to the states where they have financial advantages has led to the fact that ships have not been used at the internationally recognized level of environmental protection.

The port state authority regime is a response to flag states' inability to effectively fulfill their responsibilities in the implementation of international conventions on ships carrying their flags or to be reluctant. The high damage costs of catastrophic accidents and reluctance or inability of flag states to protect the natural environment against the risks arising from the operations of ships have demonstrated that the flag states are not always effective in fulfilling their responsibilities. This has caused concern for port states who want to protect their marine environment and people from the risk of sub-standard ships operating near their coasts. As a result, these states have realized that it is unreasonable and ineffective to rely solely on flag states. Thus the port state authority has been established as an effective second line of defense against vessel-source marine pollution.

Port state authority has been developed by the international community to strengthen the enforcement power of port states over foreign vessels to ensure the compliance of standards and prevention of vessel-source marine pollution. Accordingly, when a ship is in a port, it is subject to the laws of the port state. Therefore, the port state is authorized to impose all conditions over vessels that give effect to international safety and environmental standards and to remove ships that do not comply with these conditions from its internal waters.

The fact that the international conventions give more important roles to the port states and the development of various regional cooperation arrangements among the port states demonstrate that the authority weight on the implementation of the vessel-source pollution standards shift from flag state to port states. As a result of the increase and diversification of the powers granted to port states in international conventions on the prevention of vessel-source marine pollution, vessels have started to feel the authority of port states more.

Port state authority is of great importance in terms of eliminating the drawbacks of flag states that do not fulfill their duties of inspecting their ships and prosecuting violations. Considering that the port state authority is brought to protect the marine environment more effectively against discharges contrary to international standards, the basis of the authority can be defined as the desire of the international community to eliminate the deficiencies of the traditional flag state authority.

Besides, it can be said that the port state authority, which interferes the freedom of navigation less than the coastal state, is also welcomed by maritime states more positively.[230] Since port states have economic interests from the usage of their ports, they can better supervise the balance between the protection of the marine environment and the maritime trade in the application of maritime standards to foreign vessels, compared to coastal states.

Although international law has extended the authority of the port state, it has some weaknesses in terms of implication. For example, the use of the powers granted to the port state is left to the initiative of the port state and no obligation has been imposed on the port states on this matter. Therefore, the discretionary regime of port state authority undermines the effectiveness of the system to prevent vessel-source marine pollution. It could have provided more positive results if the port state authority has been compulsory for combat against vessel-source marine pollution.[231] Nevertheless, it is worth to note that regional port state agreements have been the best solution to avoid this problem.

Against all odds, the powers that UNCLOS provides to the port state are of great significance in terms of confirming the widening scope of port state authority, which accepted as a compromise in the historical conflict of interest between coastal states and flag states. Port States' right to exercise their authority on foreign-flagged vessels makes port state authority an important and effective link in the regulatory oversight and control of ships trading in all parts of the world.

However, it must be always kept in mind that Port State is the second control line over ships because the first control line should always be flag states. With this regard, theoretically, it is expected to detect serious defects in ships and their operations during periodic checks and statutory surveys by the flag state. The port state authority may provide more effective and efficient control in the case of following the flag state.

As a result, the involvement of port states as a new actor has made significant contributions to the enhancement of maritime safety and the protection of the marine environment. Besides, port state control has provided an effective mechanism to improve ship standards and to prevent vessel-source marine pollution. Port state authority, particularly through the implementation of regional maritime agreements, has become an effective component of the shipping world.

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[230] Daniel Bodansky, “Protecting The Marine Environment From Vessel-Source Pollution: UNCLOS III And Beyond” (1991) 18 Ecology Law Quarterly p. 740
[231] Ibid n. 217 p. 140

Although there are several systems for preventing vessel-source marine pollution, none is as a deterrent as port state authority for the vessels. Because of the economic advantages are the most common motivation for international shipping, shipowners always need to consider port state authority. Otherwise, the failure to comply with port state control requirements may result in huge costs and may prevent a vessel from trading for a considerable period.[232] This invisible effect of the port state authority is its most considerable "weapon" in preventing vessel-source marine pollution.

However, it should note that the relationship between port state authority and flag state authority is complementary. Therefore, to ensure compliance of vessels with international standards, it is not an efficient solution to leave full responsibility to neither the flag states nor the port states. In the context of the prevention of vessel-source marine pollution, the responsibility is not on one party; whoever is taking part in the maritime community should act together and need to comply with international rules and regulations to achieve global cooperation on the prevention of vessel-source marine pollution.

CONCLUSION

As in history, the seas continue to play a major role in the development of civilization. With this regard, the seas are still indispensable for sustaining both international trade and economic growth in the world. However, unlike past, the seas are under an unprecedented threat today, which may identify as vessel-source marine pollution.

It is possible to say that vessel-source marine pollution entered the agenda of the world especially with catastrophic tanker accidents that occurred in the 20th Century. These environmental disasters attracted the attention of the world. So the international community tried to control the standards of the vessels more effectively and to prevent the activities damaging the marine environment. Within this framework, as the first solution, the idea of strengthening the authority of the flag states was proposed.

Although in the beginning, it has evaluated as reasonable to give primary responsibility for the protection of the marine environment to the flag states, later it has understood that flag states were either unable or reluctant to fulfill this responsibility. In particular, the fact that the nationality link between vessels and states has not fully defined in international conventions and the emergence of

[232] Ibid n. 211 p. 236

convenience flags have been the most important reasons for the insufficiency of flag states in this task. Also, it has been realized that the coastal state authority, which developed to provide balance for the ineffectiveness of flag states, has not been a sufficient solution.

The port state authority was recognized by the international community as a response to all these failures in preventing vessel-source marine pollution. Thus, the authority balance has started to shift from flag state to port state. In this context, the principle that the port states have absolute control and jurisdiction over the ships visiting their ports was adopted. Furthermore, with the encouragement of UNCLOS regional cooperation agreements were developed by the port states to combat vessel-source marine pollution effectively. Thus, it was ensured that foreign-flagged vessels enter in a detailed control mechanism that does not change from port to port.

.Today, as port states have more enforcement powers over foreign-flagged vessels and the dissemination of regional cooperations worldwide, ports have become the most significant centers where the standards set by international conventions are effectively implemented. This has made the port state authority the most deterrent maritime authority over foreign-flagged vessels. The significance of the port state authority is sourced from this deterrent characteristics.

Nevertheless, the port state authority should never be considered as the only solution to prevent vessel-source marine pollution. The main duty of port state authority is to be complementary to other maritime authorities. Port state authority is not an alternative to flag states authority. Therefore, it is not realistic to expect from port state authority to be sufficient where flag states are not effective to prevent vessel-source marine pollution.

As a result, it is possible to say that port states are significant actors in the fight against vessel-source marine pollution today. However, it should be kept in mind that port states are the second line of defense in this fight. If there is no first line of defense, there is no point in having a second line of defense. Therefore, the port states and flag states must act together to provide a common line of defense to prevent vessel-source marine pollution.

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