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Maritime Safety: The legal framework, its practical application and developments of the recent years.

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Table of Contents

A) Introduction

Not at least since the disaster of the *Titanic,* the public realised that ships are not unsinkable. Of course, for centuries ships have been a dangerous place to work on. However, it was not only pine for adventure that motivated people to sign on ships, but rather the much better wages. But the threat caused by ships changed in the last century. In the time of wooden or steal built sailing ships, the only fear was the loss of life. Even though this is a serious threat until today, the cargo of ships and the source of their actuation caused new dangers. Since the invention of the diesel engine, ships are carrying bunker on their voyages. Since 1886[1], tankers were used to transport huge loads of oil across the oceans. This form of actuation and also cargo created new dangers for the environment. The tankers began to grow quite quickly. In the 1960's[2], the world realised, that not only human lives are in danger on sea, but also the environment.

This leads to three elements that maritime safety should focus on today. Firstly, one huge problem for international maritime safety are so called sub-standard ships. These ship's characteristics are mostly high age, badly maintained and therefore being a threat for their crew and cargo. This element can be described as the "hardware" of shipping. It deals with the ship itself. As will be shown in this work, international bodies and organisations put great effort in improving the "hardware" by setting standards regarding maintenance and safety equipment of vessels.

Secondly, an element of today's maritime safety is the "software" of shipping or the "human element" and deals with the ships crew. This again is divided in two areas, on the one hand the working and living condition for the crew, on the other hand ensuring their competence for fulfilling their duties on board properly. This element has been given attention by international Conventions like the STCW 1978, the ILO Convention No. 147 and the ISM Code.

A third element is the protection and preservation of the environment. As mentioned above, since the invention of engine powered ships, carrying dangerous cargoes, this has become a serious and important concern of public interest.

Therefore, this work will concentrate on the measures been taken to decrease the before named threats for maritime safety. This work will give an overview over the legal aspects and regimes as well as their practical application and will demonstrate, which standards ships and crew have to fulfil nowadays and how the condition ships

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[1] The German tanker *Glückauf* has been the first engine run tanker.

[2] See e.g. *Torrey Canyon* 1967, *Sea Star* 1972.

standard changed in the last decades. To exemplify this, tables of certificates will be presented, that have to be carried by ships today and statistics of the main Memoranda of Understandings will be analysed, showing the effect of modern maritime safety measurements. Also, guidelines shall be illustrated, describing the powers of Port State Control Officers to detain foreign vessels.

The structure of this work is of a historic kind. That means, its chapters are in the order of the actual appearance of their topic. But it might be of a practical advantage, to insert certain chapters to put them into context as good as possible.

B) Flag state control

Traditionally, the compliance of vessels with international standards has been the exclusive responsibility of the State the vessel has been registered in, the flag State (flag State control).[3] Even though the flag States have been assisted by classification societies, it was their duty to ensure that vessels in their register were matching current safety standards. During that time, a "genuine link" often existed between the State of register, the office of the ship owner and the nationality of the crewmembers.[4]

Nowadays the situation changed. Ships are usually manned by international crews and the State of register is not connected to the place of business of the owners. Furthermore, the legal owners are often international banking consortiums without a domicile in the State of registry.[5] The State of registry is often chosen because of tax advantages or because of complaisant inspections, avoidance of various governmental regulations and freedom from restrictions on the use of cash flows.[6] These flag States are often called 'Flags of Convenience'.[7]

It has been analysed, that one effect of globalisation is that the growing fleets of developing countries have been pushed out the mainstream sectors of shipping and been forced into "the informal sector of shipping". These "informal sector" operations are mostly carried out by substandard ships, which as a consequence leads to grievances for seafarers welfare and safety.

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[3] D Bell 'Port State control v flag State control: UK government position' 17 Marine Policy 1993, 367 at 367.

[4] G Kiehne 'Investigation, Detention and Release of Ships under the Paris Memorandum of Understanding on Port State Control: A View from Practice' 11 International Journal of Marine and Coastal Law 1996, 217 at 217.

[5] ibid at 218.

[6] A Behnam 'Ending Flag State Control?' in: Kirchner 'International Marine Environmental Law 1st ed 2003, at 127.

[7] Anyway, it has to be admitted, that this term could be misleading, because not all open registers stand for low standards. There are good as well as bad Flags of Convenience.

Because their vessels where below standards, the operators of such ships where resorting (bad) flags of convenience to register their ships. The chosen flag State often was one with no, or totally ineffective maritime administration.[8]
The problem is that until today no adequate international measurements exist to ensure flag State control to be working and force flags of convenience to fulfil their duties.

I. United Nations Convention on the Law of the Sea (UNCLOS)

UNCLOS tried to counter steer against the exploding increase of flags of conveniences or "open registry fleets". In general terms, a vessel flies a flag of convenience, when there is no "real economic connection with the country whose flag it flies."[9] This connection is identical with the above described "genuine economic link". Art. 91 of the United Nations Convention for the Law of the Sea (UNCLOS) states, that such link must exist between the State of registry and the vessel. Furthermore, Article 94 of UNCLOS sets various standards for flag States, concerning the "exercise of its jurisdiction and control in administrative and, technical, safety and social matters." This means, even though a State might grant a ship the right to fly its flag and files it in the States international register, there is a need of a "genuine link" to give the flag States the right to fulfil their obligations set in Article 94 of UNCLOS. The problem is that UCLOS does not provide a definition for such a "genuine link". UNCTAD[10] tried to fill the gap by stating that relevant elements for a "genuine link" are usually, that

- "the merchant fleet contributes to the national economy of the country;
- revenues and expenditures of shipping, as well as purchases of sales of vessels;
- the employment of nationals on vessels and
- the beneficial ownership of the vessel."[11]

Many of the ship owners registering their vessels under flags of conveniences do not fulfil the above described criteria and therefore no "genuine link" between the owners and the flag state exists. This fact makes it impossible for the flag state to fulfil its obligations set under Article 94 of UNCLOS. This is because, as ship owning

[8] A Behnam (note 6) at 124.
[9] ibid at 126.
[10] United Nations Conference on Trade and Development, www.unctad.org.
[11] A Behnem (note 6) at 126.

companies are not forced to have a "genuine link" to their flag state, it is practical nearly impossible for a flag state to enforce rules and measurements against a ship in its registers. Also, this instance leads to the fact that ship owners are still able to look for the most convenient flag to register their vessel. This gives those flag States a strong position, which are not really interested in improving maritime safety, but only to encash the taxes. "Thus, having neither defined nor obligated the components of a genuine link" UNCLOS cannot be seen as an international instrument setting minimum conditions for the registration of ships.[12] As a consequence, UNCLOS is not suitable for ensuring that flag States will satisfy compliance of the ships in their registers with the international minimum safety standards.

Anyway, the IMO tried to pursue the need for a "genuine link" between flag States and ship owners, to avoid, that ship owners are able to choose the most convenient and often low standard flag for themselves. This effort led to the United Nations Convention on Conditions for Registration of Ships.

II. United Nations Convention on Conditions for Registration of Ships

The United Nations Convention on Conditions for Registration of Ships aimed to fill the gap of a "genuine link" between ship owners and flag States. Its Articles 8, 9 and 10 established key economic links with regard to ownership and manning of the vessel.

It shall be mentioned, that States have a choice between the elements of ownership and manning to create that "genuine link" between owner and flag State. This flexibility takes into account that among certain flag States, various factors averting that States have a "genuine link" with regard to ownership and manning might exist.

For example, on the one hand, some flag States might not have enough national citizens or "persons domiciled or lawfully in permanent residence" to provide enough nationals for crews onboard ships flying their flag.[13] In these cases, the Convention states, that the flag State ensures that the ships in its register are manned on "such a level and competence as to ensure the compliance with applicable international rules and standards, in particular those regarding safety at sea." Also, the flag State is obliged to ensure that the conditions of employment "are in conformity with applicable international rules and standards" and that "adequate procedures exist for the

[12] ibid at 129.
[13] ibid at 129.

settlement of civil disputes between seafarers employed on ships flying its flag and their employers."[14]

On the other hand, flag States might not have enough capital to participate effectively in ship ownership.[15] Still, the flag State shall ensure that the ship owning company or its subsidiary was established and/or has "its principal place of business within its territory." If this is not the case, the ship owner shall have at least "a representative or management person who shall be a national of the flag State or be domiciled therein."[16]

The Convention also strengthens the position of seafarers in ruling that a flag State shall provide a "competent and adequate national maritime administration which shall be subject to its jurisdiction and control" to ensure that a ship flying its flag complies with the flag States "laws and regulations concerning registration of ships and with applicable rules and standards concerning, in particular, the safety of ships and persons on board and the prevention of pollution of the maritime environment."[17]

Sadly, until today, a number of flag States do not have such national administrations.[18]

It has been suggested, that the United Nations shall introduce a United Nations agency to review the structure and performance of the maritime administration of flag States and might help them to meet the standards set out in the Convention.[19] Anyway, it is questionable, if the demand for such an agency is realistic.

The United Nations Convention on Conditions for Registration of Ships has a double effect. Firstly, it defines the "genuine link" between the ship owner and the flag state. This would lead to a stronger position of the flags of convenience to ensure that ship owners stick to the set rules and standards regarding maritme safety and working conditions. Secondly, it would force ship owners to register their vessels only in states they are connected to by a "genuine link". This would avert, that ship owning companies choose flag States that have no interest in deploying their legislation and adopted standards on these vessels.

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[14] Article 9 s. 6 c) of the Convention.
[15] A Behnam (note 6) at 129.
[16] ibid at 130.
[17] Article 5. s. 2 of the Convention.
[18] A Behnam (note 6) at 130.
[19] S.G. Sturmey, 'United Nations Convention on Conditions for Registration of Ships', Lloyds Maritime and Commercial Law Quarterly, February 1987.

The United Nations Convention on Conditions for Registration of Ships would set a signal in the right direction to ensure that flag State create better work conditions on board vessels and stick to international safety measures, or that ship owners are forced to register their vessels in more strict registers and therefore stop "flag hopping". Sadly, the Convention still awaits ratification and is unlikely to enter into force.

As mentioned above, flag States are assisted Classification Societies. For the sake of completeness, at this point, an short overview shall be given about structure and work of Classification Societies.

III. Classification Societies

Classification Societies are private organisations specialised in surveying ships. After survey, a classification certificate is issued, which is basis for insurance, trade and often entry into foreign ports.[20]

The main classification societies are:

- Lloyds Register of Shipping
- Det Norske Veritas
- Germanischer Lloyd
- Bureau Veritas
- American Bureau of Shipping
- Registro Italiano Navale
- Nippon Kaiji Kyokai
- Hellenic Register[21]

Even though private organised, Classification Societies are supposed to complement the duty of the flag State to survey ships and issue certification under the certain Conventions. Anyway, Classification Societies are only bound to the Conventions, ratificated by the ships flag State. Because Classification Societies are of a dual nature, private run but fulfilling public duties, they have become target of heavy criticism lately.[22] It has been stated, that Classification Societies are more concerned about their reputation amongst ship owners, then worrying about their public duties.

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[20] JE Hare'Shipping Law' 2nded 2009 at 332.
[21] ibid at 333.
[22] ibid at 334.

This conflict also led to so called "class hopping". Ship owners, that have been denied class for their sub-standard ships, just shifted to a society, which is willing to issue the classification certificates.[23]

This shows, that even though specialised companies like Classification Societies are supposed to ensure flag State control working, their conflict between private and public interest leads to unsatisfactory results in maritime safety.

To be fair, it shall be mentioned, that Classification Societies partially are also involved in port State control.[24] Their advantage on that field is, that they only fulfil public interests and therefore do not have to fear that phenomenon of "class hopping" or their reputation.

Concluding, it can be said, that flag State control, even assisted by classification societies, is not able to keep pace with and ensure international shipping standards.

IV. Possible ways to increase flag State control liability

Regarding the above said, it seems that flag State control is not able or often not willing to introduce and enforce standards to make shipping safer and life aboard more pleasant.

Anyhow, a list of certain needs with regard to flag State control has been presented, to show up which lacks would have to be filled to make flag State control as effective as it should be.

According to this list the international community shall

- "Elaborate an international instrument designed to deal with problems of a variety of illegal acts and fraud, and specifically the problem of jurisdiction and extradition. Such a convention could expand the jurisdiction of States and list the illegal maritime acts to be covered. This expansion of jurisdictional capabilities of States should be linked to extradition requirements, so that a State could either prosecute offenders in its custody or extradite them to a requesting State. So far, Governments have not found any existing international legal instrument to govern illegal maritime acts or offences appropriately. Crimes which lead to the destruction of living resources, endanger safety of life and result in pollution are not "extraditable crimes", governed by international treaty. It seems that the time has come for the

[23] ibid at 334.

[24] Port state control will be discussed below.

international community to address these issues seriously, in the same way as it rose to the challenge of air piracy, drug trafficking and terrorism
(The Hamburg Declaration on the Ocean: The European Challenge emerging from the PACEM in Maribus XXVIII states: "Particular attention should be paid to the issues of the effective exercise of jurisdiction and control, including the need for elaboration of an international instrument relating to extradition in maritime crimes, fraud, piracy and for the protection of seafarers against abuse and violence")

- Ensure to promote coherence among all involved institutions to their work on the oceans and the Law of the Sea [...];
- Promote increased political accountability as regards the various uses of the oceans through a vigorous approach to regional cooperation and coordination;
- Involve all stakeholders of the oceans, particularly civil society and nongovernmental organizations, in the evolving framework of governance;
- Pay greater attention to the recent proposal on levying of charges for the use of "global commons in high seas"
- Set higher global goals and prepare the ground for further progress in promoting a system of global governance of the oceans that is comprehensive and interdisciplinary; that is democratic, inclusive and transparent; and that can contribute to addressing universal concerns. It may be necessary to establish an Oceans Senate. This could be a quasi-legislative or deliberative body composed of elected members from member states, heads of multilateral institutions, eminent persons who have made significant contributions to the oceans, representatives of the civil society and industry. The deliberations or recommendations of the Oceans Senate could be transmitted to the General Assembly for endorsement and legitimacy"[25]

Even though, some of the needs, described in this list might be illusive, it shows that the public is aware, that flags of convenience in many cases do not or cannot fulfil their duties.

Even only started in the 1980s, this awareness, that flag States did not assure any longer, that their merchant fleet matches the minimum standards with regard to maritime safety and pollution prevention, led to the introduction of port State control

[25] A Behnam, (note 6) at 134.

which has been a "strong medicine" against the dispersion of substandard ships. The port States realised that the only way to minimise the number of substandard ships was to inspect vessels on their compliance with international standards themselves.[26] It therefore shall be shown, on which legal basis port State control is operated, what regulations and rules actually set the standards for port State control and how different regions in the world organised themselves in so called Memoranda of Understanding (MoU) to exercise port State control. Also three examples shall be presented, how port state control works in particular countries. Attention shall also be paid on the developments of the recent years. Having a look on necessary documents and guidelines regarding port State control, as well as on statistics, showing the deployment of maritime safety, shall clarify the huge range of today's safety standards and their actual effect in maritime safety.

C) Port state control

This section deals with port state control. The two main factors of port state control shall be presented to the reader. On the one hand, the legal basis that allows port State authorities to inspect foreign ships, on the other hand it shall be shown how port State control works in reality.

Regarding the first factor, focus lies especially on international Conventions, setting the standards for ship safety, working conditions and environmental protection. Regarding the second factor, it shall be presented what ship owners have to provide for their vessels to make them save as well as the different types of inspections and guidelines for the port state authorities. Also, three examples are provided, which authorities are responsible in the cases of the U.S.A., South Africa and Germany and how they work.

I. Sources and Origins of port state control

Since the responsibility of ship safety rests mainly with the flag States, a source of law was needed to be found for port States, that allows them to board and inspect foreign vessels themselves. Such a source could be customary law.

1. Legal Basis of port state control

[26] G Kiehne (note 4) at 218.

By exercising port State control, a port State applies its national laws over a visiting vessel. The problem that resolves is that usually international law embraces the fiction that ships are floating land masses of the state of registry and therefore the flag State has total jurisdiction over it.[27] This leads to a potential conflict between the flag State and the port State. Anyway, under customary law it is stated, that "by entering foreign ports and other internal waters, ships put themselves within the territorial sovereignty of the coastal State."[28] In other words: "As a port is part of a State's internal waters over which a State can exercise the same jurisdiction as if internal waters were part of the land of the State, a foreign vessel in port is subject to the same jurisdiction as an alien on land."[29]

Therefore, if a foreign vessel enters a State's port, it "voluntarily implies that the vessel consents to comply with the State's rules and regulations primarily reflecting international rules and standards. Therefore, a foreign ship voluntarily lying in a State's port is subject to the exercise of inspections by the port State to determine if the ship is actually in compliance with relevant safety rules and regulations."[30]

The exercise of port State control is therefore generally legally justified; because the authority of the port State is superior to that of the flag State during the time the vessel lies in port.[31]

Especially, when it comes to the safety of the environment, the United Nations Convention on the Law of the Sea provides rules that enact port State control.

The two important measurements, enabling port States to inspect foreign vessels can be found in UNCLOS Articles 211 and 218.

Paragraph 3 of Article 211 states that port States have the right to establish "particular requirements for the prevention, reduction and control of pollution of the marine environment as a condition or the entry of foreign vessels into their ports or internal waters or for a call at their off-shore terminals" and requires them to give "due publicity to such requirements and...communicate them to the competent international organisation."

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[27] UNCLOS Art. 91 (1).

[28] RR Curchill and AV Lowe 'The law of the sea' 3rded 1999, 54.

[29] TL McDorman 'Port State Enforcement: A Comment on Article 218 of the Law of the Sea Convention' 28 Journal of Maritime Law and Commerce 1997, 305 at 308.

[30] HS 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' 23 International Journal of Marine and Coastal Law 2008, 715 at 720.

[31] RR Churchill and A.V. Lowe (note 28) at 54.

As far as Article 211 allows port States to enable certain domestic requirements and standards to protect their marine environment, Article 218 administers their "Enforcement by port States". Paragraph 1 of Article 218 states

"when a vessel is voluntarily within a port or an off-shore terminal of a State, that State may undertake investigations and, where the evidence so warrants, institute proceedings in respect of any discharge from that vessel outside the internal waters, territorial sea or exclusive economy zone of that State in violation of applicable international rules and standards established through the competent international organization or general diplomatic conference."

Furthermore, paragraph 3 states

"when a vessel is voluntarily within a port or at an off-shore terminal of a State, that State shall, as far as practicable, comply with requests from any State for investigation of a discharge violation referred to in paragraph 1, believed to have occurred in, caused, or threatened damage to the internal waters, territorial sea or exclusive economic zone of the requesting State."

It has been observed, that in this respect, UNCLOS "makes radical changes in the exclusive character of flag State jurisdiction, but still leaves intact the central principle of earlier Conventions that the flag State has primary responsibility for the regulation and control of pollution from its ships."[32]

Therefore, when it comes to the protection of the environment, the legal basis for port State control is not only customary law, but also the United Nations Convention on the Law of the Sea. This shows the serious concern of the international community about the protection of the marine environment.

Not at least the International Convention for the Prevention of Pollution from Ships 1973, modified by Protocol of 1978 (MARPOL 73/78) is an indicator for this. As will be shown further down, MARPOL 73/78 is one of the most important international regulations when it comes to port State control.

Summarised, it can be said that port State control finds its legal basis generally in customary law, but especially when it comes to environmental protection, in legal provisions as the United Nations Convention on the Law of the Sea.

2. Scope of port State control

[32] M Valenzuela, 'Enforcing Rules against Vessel-Source Pollution Degradation of the Marine Environment: Coastal, Flag and Port State Jurisdiction' *Order for the Oceans at the turn of the Century 1999,* 485 at 492.

In general, port State control "confers the power to board, inspect and where appropriate detain a merchant ship flying a flag foreign to that state."[33] The aim is to form a practical exercise of administrative powers to verify if a foreign merchant ship itself or its documentations comply with international standards as well as national legislation dealing with ship's safety and environmental protection.[34]

Anyway, even though port State control is legally justified by customary law, it was not well-defined what measurements and procedures port State control comprehended. [35] Generally, foreign vessels were supposed to comply with "generally accepted safety and anti-pollution standards".[36]

Anyhow, the phrase 'generally accepted safety and anti-pollution standards' itself is a quite imprecise term to ascertain the competences of the port State authorities. After the grounding of the *Torrey Canyon* in 1967, international organisations such as the International Maritime Organisation (IMO), the International Labour Organisation (ILO) and the International Transport Workers' Federation (ITF) gained power.[37] Especially the IMO and the ILO created explicit standards by drafting and concluding a number of international maritime Conventions.[38]

Especially the IMO has created a strong interest in maritime safety measures.

The IMO is a London-based specialized agency of the United Nations. Specialized means the agency has legal and finance independence. The governing body of he IMO is the Assembly formed by its Member States. Furthermore, it consists of a Council, a Maritime Safety Committee, a Legal Committee, a Technical Cooperation Committee, a Facilitation Committee and a Secretariat.[39] The IMO's main business is maritime 'standard-setting'. This includes Conventions, Recommendations, Codes and others. It aims to set the legal framework for uniformity in the rules and practice regarding worldwide shipping.[40]

When it comes to maritime safety, two areas drew the IMOs attention:

Firstly, a set of Conventions that deals with safety of vessels and working condition for seafarers.

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[33] JE Hare 'Port State Control: Strong Medicine to cure a sick Industry' 26 Georgia Journal of International and Comparative Law 1997, 571 at 571.

[34] HS Bang (note 30) at 720.

[35] Committee on Coastal State Jurisdiction relating to Marine Pollution, the Final Report of International Law Association London Conference (2000) at 38, www. Ila-hq.org/html/layout_committee.htm.

[36] HS Bang (note30) at 721.

[37] JE Hare (note 33) at 573.

[38] HS Bang (note 30) at 721.

[39] P Boisson 'Safety at Sea' 1999 at 60.

[40] I Christodoulou-Varotsi, D Pentsov 'Maritime Work Law Fundamentals' 1st ed 2007, 419.

These conventions also confirmed the port State's authority to inspect foreign vessels, especially in the 1974 International Convention for the Safety of Life at Sea (SOLAS), the 1973/78 International Convention for the Prevention of Pollution from Ships (MARPOL), the ILO Convention No. 147, the 1966 International Convention on Load Lines and the 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) and the 1969 International Convention on Tonnage Measurement of Ships (Tonnage 1969).
Secondly, the IMO invented a code that was supposed to create safe working conditions and therefore as a side affect conditions of ships and protection for the environment, the ISM Code.
The Conventions and the ISM Code will be highlighted later in this work, to show on detail, which scope of ship safety, better working conditions and environmental protection they cover.

3. Practical procedure of port state control

Before coming to the legal framework of port State control, the basics of the practical implementation shall be presented to the reader. This procedure makes it easier to refer to practical methods and guidelines during the presentation of legal aspects as the Conventions and the ISM Code.
Firstly, this work will delineate the position and work of Port State Control Officers. After that, the different types of inspections shall be highlighted as well as the meaning of "deficiencies" and "detentions".
After that, three port State authorities, namely for the U.S.A., South Africa and Germany, will be focused on.

a) Port State Control Officer (PSCO)

Port State Control Officers, or PSCOs, are the inspectors carrying out port State control surveys. A PSCO usually is a properly qualified person who is authorised to carry out surveys by the port State authority and acts under its responsibility.[41]
Anyway, assumptions on PSCOs can diversify from MoU[42] to MoU or even between several port state control authorities.
An example shall be given with view on the Paris MoU, the first and therefore leading MOU. This paradigm is exemplary; the standards of other MoUs may differ.

[41] ZO Özcayir 'Port State Control' 2nded 2004 at 5.14.
[42] Memoranda of Understanding will be subject of this work later.

Under the Paris MoU, a PSCO needs to have served as a flag State inspector for at least a year. Also a PSCO needs to possess a certificate as a master mariner, chief engineer, or needs to have passed an examination as naval architect or mechanical engineer followed by five years experience.

In case of master mariners and chief engineers, the five year experience of sea service can be replaced by an university degree with relevant training and must have been trained and qualified at a training school for ship safety inspectors and must have served at least two years as a flag State inspector dealing with inspections and certifications in accordance with the applicable international Conventions.[43]

Under the Paris MoU, PSCOs not conforming to the above described criteria still are accepted, if they where employed before 1st July 1996. A PSCO must be able to communicate orally and in writing in the English language. If a port State control authority within the Paris MoU cannot provide PSCOs with the required professional expertise, the PSCOs of that authority may be assisted by any other person with the required expertise.[44] Still the Paris MoU is strict, that "PSCOs and any persons assisting them will have no commercial interest, either in port of inspection or in the ships inspected, nor will PSCOs be employed by or undertake work on behalf of non-governmental organizations which issue statutory certificates or which carry out the surveys necessary for the issue of those certificates to ships."[45]

Even though these are the requirements of the Paris MoU, it is likely, that other MoUs refer to these standards.

The next section shall describe, on which type of inspections PSCOs can come back and on which equipment they will put their attention on. The certain inspections also are different regarding several ship types. The section therefore will commit to the distinctions regarding the different types of vessels.

b) Inspection types of port state control

"The safe operation of a ship is a combination of shore management, a sufficient number of competent crew members and a well-maintained and equipped vessel."[46]

Therefore, inspections regarding port state control are aimed on several aspects of shipping. Not only the vessel is surveyed, but also the competence and training of

[43] Annex 7 Paris MOU.
[44] ZO Özcayir (note 41) at 5.14.
[45] section 3.8 Paris MOU
[46] ZO Özcayir (note 41) at 5.15

the crew, the work of ship owners (as implementing the ISM Code) and also their classification societies. Till the year 1991, port State control authorities were only able to control the "hardware" of a ship. All international conventions at that time only provided for checking certificates and equipment on board a ship. Till then, the performance of a crew could not be surveyed even if there were serious doubts in their competence.[47] This only changed when three serious incidents aboard ships happened and showed up coastal States what they neglected the past decades.

In three disastrous incidents, namely the *Herald of Free Enterprise*[48], the *Scandinavian Star*[49], and the *Exxon Valdez*[50], it has showed up, that human error has been the major reason and caused enormous loss of lives and damage to the environment.

After these incidents, in 1991 European ministers, responsible for maritime safety, met in Paris. They agreed on "Guidelines for control on operational requirements", which aimed to enable port State control authorities to inspect also training and competence of the crews to improve marine safety and pollution prevention.[51]

These guidelines also have been adopted by the IMO and submitted as Resolution A.681(17) in November 1991. After its revision, the Resolution has been superseded by IMO Resolution 787 (19), "Procedures for port State control", which has been amended by Resolution A.882 (21). The Resolution provides basic procedural guidelines for PSCOs on the "conduct of port State control inspections, in order to promote consistency in the conduct of inspections worldwide, and harmonize the criteria for deciding on deficiencies of a ship, its equipment and its crew, as well as the application of control procedures."[52]

Under the rules of port State control, every ship is supposed to be prepared for a survey and/or inspection at any time. When a PSCO comes onboard a vessel, he is supposed to introduce himself to the master and/or the responsible officers on board prior to the control.[53]

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[47] ibid at 5.15.

[48] The *Herald of Free Enterprise* has been a Ro-Ro Ferry that capsized while leaving the port of Zeebrugge in 1987. 192 of the 623 persons on board drowned.

[49] A fire started on board the Ferry *Scandinavian Star* in 1990. Due there was no safety management aboard the ship, a 158 of nearly 500 passengers lost their lives.

[50] The Tanker *Exxon Valdez* ran on ground in the Prince-William Sound right ahead Alaska. It spilled 40.000 tons of crude oil into the sea and caused one of the biggest environmental disasters so far.

[51] ZO Özcayir (note 41) at 5.15.

[52] International Maritime Organization 'Procedures for port state control' 1st edition 1997 at iii.

[53] DNV Guide on port state control, p. 11.

There are three bases that port State control inspections can be conducted on:

- an initiative of the port state authority;
- the request of, or on the basis of, information regarding a ship provided by another Administration;
- information regarding a ship provided by a member of the crew, a professional body, an association, a trade union or any other individual with an interest in the safety of the ship, its crew and passengers, or the protection of the marine environment.[54]

It has to be distinguished mainly between three types of inspections,

1. initial inspection (random)
2. expanded inspection (targeted, periodical)
3. more detailed inspection (escalated)[55]

The initial inspection aims to control the overall condition and impression of the vessel. The PSCO will usually examine the relevant certificates and documents. That is why they should be held ready by the master to present them to the PSCO.[56] When an initial inspection is carried out, is usually described in the guidelines of the certain MoU. This is often referred to as "targeting" and will be described in the section about the Paris MoU.

The expanded inspection is only for certain types of ships which carry a higher level of risk with them. Explicitly, these types of vessels are tankers, bulk carriers, gas and chemical carriers and passenger ships. An expanded inspection is to be carried out on these vessels every 12 months. These categories of vessels are also divided into certain categories depending on their size and age.
An overview shall be given about the technical elements of an expanded inspection to exemplify how complex these surveys are.
Following examinations are considered to be mandatory parts of an expanded inspection:

- execution of black-out and start of emergency generator;
- inspection of emergency lighting and back up sources including batteries;

[54] ibid at p. 11.
[55] ibid at p. 11.
[56] ibid at p. 11.

- operation of emergency fire-pump with two firehoses connected to the main fireline;
- operation of bilge pumps;
- closing of watertight doors;
- lowering of a seaside lifeboat to the water level and test the release mechanism;
- inspection of fire dampers to engine room, cargo holds and accommodation;
- test of remote emergency stop e.g. boiler, ventilation and fuel pumps;
- testing of steering gear including auxiliary steering gear;
- inspection and testing of emergency source of power to radio installations;
- inspection and, to the extent possible, test of engine- room separators.[57]

Additionally to these general tests, there are specialised inspections in regard of the above mentioned types of vessels.

For Oil Tankers inspections are carried out with regard to:

- fixed-deck foam system;
- fire-fighting equipment in general;
- inspections of fire dampers to pump room;
- control of pressure of inert gas and oxygen content thereof, check of survey ;
- report file to identify possible suspect areas requiring inspections.[58]

For bulk carriers inspections are carried out with regard to:

- corrosion of deck machinery foundations;
- deformation and/or corrosion of hatch covers;
- cracks and/or local corrosion in transverse bulkheads;
- access to cargo holds;
- check of Survey Report File to identify possible suspect areas requiring further inspections.[59]

For gas and chemical carriers inspections are carried out with regard to:

[57] ibid p. 14.
[58] ibid p. 13f.
[59] ibid p. 14.

- cargo tank monitoring and safety devices relating to temperature, pressure, gas detection, and ullage;
- oxygen analysing and explosimeter devices, including their calibration;
- availability of chemical detection equipment (bellows) with an
- appropriate number of suitable gas detection tubes for the specific cargoes being carried;
- cabin escape sets giving suitable respiratory and eye protection, for every person;
- onboard (if required by products listed on International Certificate of Fitness or Certificate of Fitness for the Carriage of Dangerous Chemical in Bulk or Liquefied Gases in Bulk as Applicable);
- check that product(s) being carried is/are listed in the International Certificate of Fitness or Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or Liquefied Gases in Bulk as applicable;
- the fixes fire fighting installations on deck whether they be foam or dry chemical or other as required by the product(s) carried.[60]

For passenger ships inspections are carried out with regard to:

- testing of fire detection and alarm system;
- testing of proper closing of fire doors;
- testing of public address system;
- fire drill where, as minimum, all sets of fireman's outfits must be demonstrated and part of the catering staff shall take part;
- demonstration that key crew members are acquainted with the damage control plan.[61]

This table shows that the expanded inspection concentrates on the usual perils of shipping in general and also takes into account, that some kind of ships are especially endangered. The basic mandatory checks are related to fire fighting devices, life saving and emergency electricity equipment. Of course, especially endangered vessels like gas carriers, tankers and passenger ships do have their individual needs of safety devices. The check list may seem inappropriately

[60] ibid p. 14.
[61] ibid p. 14f.

comprehensive, but every element occurs to be life saving and therefore absolutely necessary.

A third type of inspection available, is the more detailed inspection.
A more detailed inspection will be carried out in case there are clear grounds that the vessel itself, the equipment, or the crew don't comply with the measurements of the relevant conventions.[62]
Important is the definition of 'clear grounds'. Abstractedly, 'clear grounds' exist where a PSCO finds evidence which by his professional judgement warrants a detailed inspection on a vessel, its crew or equipment. Also, in case the PSCO finds evidence during an expanded inspection which gives 'clear grounds' for a more detailed inspection. This detailed inspection, contrary to the expanded inspection, can also be concentrated on certain parts or areas of the ship. Priorities are

- navigational safety
- communication
- fire-safety
- life-saving appliances.[63]

The basic rule for a PSCO should be, that whenever he believes there are 'clear grounds' for certain deficiencies, he should carry out a more detailed inspection.[64]
However, to create standards, when a more detailed inspection is needed, 'Clear grounds' is defined by a catalogue of scenarios:
The PSCO can believe there are 'clear grounds' for a more detailed inspection

- "in the absence of principle equipment or arrangements required by the conventions
- evidence from the review of the ship's certificates that a certificate or certificates are clearly invalid
- evidence that the ship's logs, manuals or other documentation are not on board, are not maintained, or are falsely maintained
- in the opinion of the PSCOs general impression and observation serious hull or structural deterioration or deficiencies exist that may place at risk the structural, watertight or weathertight integrity of the ship

[62] ibid at 11.
[63] ibid at.15.
[64] ibid at 15.

- in the opinion of the PSCOs general impression or observation serious deficiencies exist in the safety, pollution prevention, or navigational equipment
- information or evidence that the master or crew is not familiar with essential shipboard operations relating to safety of ships or the prevention of pollution, or that such operations have not been carried out
- indication that key crew members may not be able to communicate with each other or with other persons on board
- absence of an up-to-date muster list, fire control plan, and for passenger ships, a damage control plan
- the emission of false distress alerts not followed by proper cancellation procedures
- receipt of a report or complaint containing information that a ship appears to be substandard
- the ship has been reported by pilots or port authorities or others as having deficiencies which may prejudice safe navigation
- ships whose statutory certificates have been issued by an organisation which is not recognised under the term of Council Directive 94/57/EC of 22 November 1994 on common rules and standards for ship inspection and survey organisations and for the relevant activities of maritime Administration
- the ship has been involved in a collision on its way to the port
- the ship is in a category for which expanded inspection has been decided
- the ship has been suspended from their class or for safety reasons in the preceding six months
- the ship has been accused of an alleged violation of the provisions on discharge of harmful substances or effluents
- the ship's statutory certificates on the ship's construction and equipment, have been issued by an organisation which is not recognised by the Authority
- the ship flying the flag of a State appearing in the three-year rolling average table of above average detentions in the annual report of MoU."[65]

This table shows, that Clear Grounds can be of different kinds. For example is the communication between Crew Members as important as effective fire fighting equipment. As example may serve the horrible instance of the *Eurasian Dream* in

[65] ibid 12.

1998. Even though, the *Eurasian Dream* had a working fire fighting system, no emergency plans existed when she catched fire at the port of Sharjah. This led to a a spread of the fire, because the crew was not able to fight it. The car carrier and her cargo became a total loss. Therefore, it is important, that PSCOs inspect not only the hardware of a vessel, but that the guidelines for inspections also contain the 'human element' in form of communication and emergency plans.

c) Deficiencies and detentions

As shown above, Port State Control Officers carry out inspections within a wide range of different purposes. Mainly, their focus lies on the safety of ships, crewing standards and the prevention of pollution.[66] In case of deficiencies, following corrective measures can be taken by Port State Control Officers:

Firstly, the PSCOs can demand the rectification of deficiencies prior to departure. Secondly, they can demand, that deficiencies are rectified in the next port or thirdly, in case of minor deficiencies, within 14 days. Or fourthly, in serious cases, the detention of the ship can be demanded.[67]

A detention usually is demanded in cases where a vessel is clearly hazardous to safety, health or the environment.[68]

Detention is the most powerful measure of port State control. Every ship owner or charterer tries to avoid a detention of his ship, which may result in delay of the voyage and therefore lose of money.[69]

Detention can be ordered by a PSCO on basis of inspections, no matter if this has been a routine or a detailed/expanded inspection. But, a detention will not be issued until all "subject conditions" for a detention have been met. These "subject conditions" are disposed by MoU recommendations.[70]

In case of detected deficiencies, the PSCO my levy an inspection fee on the ship owner. Also on follow up surveys, this fee can be incurred. In the case of detention, immediate notice has to be given to the flag State and, as far as possible, also to the Classification Society.[71]

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[66] HS Bang (note 30) at 722.
[67] G Kiehne (note 4) at 217.
[68] Art. X (2) STCW Convention, Art. 4 (1) ILO Convention No. 147, Art. 219 UNCLOS..
[69] A Rajadurai ' Regulation of Shipping: The Vital Role of Port State Control' 18 Maritime Law Association of Australia an New Zealand Journal 2004, 83 at 102.
[70] P Anderson 'ISM Code' 2nd edition 2005, at 65.
[71] ibid at 65.

There might be cases where it might not be possible to rectify faults and deficiencies that led to the detention at the port of inspection. In that case, the PSCO can authorise the master to sail his ship to an appropriate installation, dock or repair yard. Anyhow, this authorisation is usually connected to certain conditions.

This means, if the ships fails to fulfil the set conditions or does not sail to the named repair yard directly, the vessel usually is banned from entering any port the cognisant MoU.[72]

Still, detention should always be the last option in case of deficiencies of a vessel and there should be clear grounds for dangers regarding maritime safety.

The Paris MoU published lists of criteria, in which cases a detention might be considered. These lists closely refer to the international Conventions applied by the MoU. Which criteria might lead to a detention of a vessel, shall be shown in the chapters about the specific Conventions as safety instruments.

Nevertheless, the PSCO has to bare in mind, that undue detention, as mentioned above, might cause extravagant high losses for ship owners or charterers. Of course, there is always the possibility that a wrongful detention may be made.[73] This event is covered by Art. 232 of the United Nation Convention on the Law of the Sea (UNCLOS) which states that port States are liable for losses resulting from undue detentions.[74]

UNCLOS therefore is a double-edged sword for port State control authorities. On the one hand, it allows PSCOs to inspect foreign vessels, especially with regards to environmental protection. On the other hand, it admonishes PSCOs not to detain a ship on an equivocal basis.

4. Domestic port state control

After it has been shown, how port State control is carried out in general, three examples shall be presented how port State control is exercised in certain countries. As examples, the United States of America, South Africa and Germany have been chosen.

a) United States of America

[72] ibid at 65.
[73] JE Hare (note 33) at 590.
[74] HS Bang (note 30) at 723.

The United States of America already started in the 1970's to exercise port State control in their ports. The U.S. port State control authority is the U.S. Coast Guard. The U.S.A. are not party of any Memorandum of Understanding and can therefore only rely on their national legislation. Title 46 United States Code, Chapter 33 states that foreign vessels, operating in U.S. waters are subject to inspections. Reciprocity is accorded to vessels which flag States are party to SOLAS.[75] Due the U.S.A. are not a member to any MoU, no conclusive list of Conventions enforced by the U.S. Coast Guard is existing. Furthermore, the U.S.A. exercise their port State control through the 'U.S. Coast Guard long- standing foreign vessel boarding programme' which aims to identify and eliminate foreign vessels in not-compliance with international Convention and U.S. laws from U.S. waters.[76]

b) South Africa

South Africa is currently member of two MoU's, the Indian Ocean MoU and the Abuja MoU. The national legislation, enacting port State control in South Africa was the Marine Traffic Act (1981).[77] Even though, South Africa suffers under a lack of surveyors[78], it fulfils a very important role under the Abuja MoU[79], even though the current overall inspection rate lies below 5 %.[80] The South African port State authority is SAMSA, which "was established on 1st April 1998 in terms of the South African Maritime Safety Authority Act 5 of 1998."[81]

c) Germany

The German national legislation for introducing port state control in Germany has been contained in the Ship Safety Ordinance of 1986[82].[83] The German authority to exercise port state control is the See-Berufsgenossenschaft (See-BG), which has been entrusted by section 6 of the Maritime Navigation Act[84].[85]

In Hamburg as an example, port state control is exercised in a way that all ships, about to enter the port, are registered in a 'list of ships at ports'. This database is run

[75] ZO Özcayir (note 41) at 10.3.
[76] ZO Özcayir (note 41) at 10.3.
[77] JE Hare (note 33) at 588.
[78] ibid at 589.
[79] See below, Abuja MoU.
[80] JE Hare 'Flag, Coastal & Port State Control' 16 Sea Changes 1994, 57.
[81] http://www.samsa.org.za/content.asp?subID=1 visited 10.01.2010.
[82] Schiffssicherheitsverordnung (SchSV) BGBl. 1986 I 2361.
[83] G Kiehne (note 4) at 220.
[84] Seeaufgabengesetz, BGBl. 1994 I 2802.
[85] G Kiehne (note 4) at 221.

by a private company called 'Schiffsmeldedienst'[86]. The 'Schiffsmeldedienst' acts as a port state control co-ordinator and makes considerations which vessels are to inspect. This 'rolling list' is then forwarded twice a day to the 'See-berufsgenossenschaft' which will inspect the suggested vessels.[87] The inspection itself follows the measurements of the Paris MoU.[88]

5. International Conventions

In the next chapter, an overview about the most important international Conventions regarding port State control shall be given. Besides presenting the legal structure of port State control, the practical effect of the Conventions shall be illuminated to the reader. Overviews, which Certificates are needed to fulfil the requirements of the respective Convention will point up that these Conventions cover nearly every source of danger regarding ship safety, working conditions and environmental protection.

a) International Convention for the Safety of Life at Sea 1974 (SOLAS 74)

Of all international conventions targeting on maritime safety, SOLAS is deemed to be the most important. It deals with the "hardware" of shipping, the ship itself. Anyway, Since the implementation of the ISM Code as Chapter IX of the Convention, it also deals with the "human element" of shipping.

aa)History and main objective of the convention

The SOLAS Convention looks back on quiet a long history. The first version has been a reaction on the *Titanic* disaster and been adopted in 1914. It has been renewed by the second edition in 1929 which came into force in 1933, the third adopted in 1948 and entered into force in 1952 followed by the fourth from 1960. The 1960 Convention has been the first convention drafted by the new created IMO and came into force on 26th May 1965.[89] Originally, the plan was to update the 1960 SOLAS with Amendments, to keep pace with the constant change of maritime standards. But it showed up quiet quickly, that the modernization of the convention through amendments is a too long taking process. Therefore, the SOLAS 74 has been drafted. It concluded all amendments of the 1960 convention but also included

[86] ship announcement service.
[87] G Kiehne (note 4) at 221.
[88] ibid at 222.
[89] http://www.mss-int.com/solas.html visited 13.01.2010.

a specified time period, in which changes and additions through amendments have to be made.[90]

SOLAS 74 came into force in 1980 and has since then been regularly modified by amendments.[91]

The main target of the convention is to describe minimum standards regarding the construction, equipment and operation of ships. In this regard SOLAS 74 considers the flag State of every vessel to carry the main responsibility for the accordance of their vessels with these set standards. The compliance with the minimum standards described in SOLAS 74 has to be proofed by safety certificates.

But since it showed up that not every flag State is reliable in regard of inspecting the safety of their vessels, SOLAS 74 gave the right to inspect these certificates also to foreign authorities.[92] These inspections are carried out, as described before, by employees of the port States, the PSCOs.

bb) Structure and Content of SOLAS 74

SOLAS 74 is divided into 12 chapters.

- Chapter 1 contains the general provisions.
- Chapter 2-1: Construction – Subdivision and stability, machinery and electrical installations
- Chapter 2-2: Fire protection, fire detection and fire extinction
- Chapter 3: Life-saving appliances and arrangements
- Chapter 4: Radiocommunications
- Chapter 5: Safety of navigation
- Chapter 6: Carriage of Cargoes
- Chapter 7: Carriage of dangerous goods
- Chapter 8: Nuclear ships
- Chapter 9: Management for the Safe Operation of Ships
- Chapter 10: Safety Measures for high-speed craft
- Chapter 11-1: Special measures to enhance maritime safety
- Chapter 11-2: Special measures to enhance maritime security
- Chapter 12: Additional safety measures for bulk carriers

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[90] http://www.imo.org/Conventions/contents.asp?topic_id=257&doc_id=647 visited 13.01.2010.

[91] ZO Özcayir (note 41) at 4.7.

[92] http://www.imo.org/Conventions/contents.asp?topic_id=257&doc_id=647 visited 13.01.2010.

As the SOLAS 74 table of content shows, the Convention covers nearly every aspect regarding the "hardware" of a ship. SOLAS 74 therefore mainly aims to ensure, that the ship itself is in the best possible condition.

The basic concern of the general provisions in chapter 1 is to regulate the required surveys for different kinds of vessels and also 'the issuing of documents signifying that ships meet the requirements of the convention'.[93] As seen above, the distinction between different types of vessels is necessary to meet the deviant requirements.

For example, passenger ships are required to be surveyed before the vessel is put into service and after that, a periodical survey every 12 months and also additional surveys if the occasion arises shall be carried out.

The requirements for cargo carrying ships are less strict. After the initial survey, the vessel has to be generally inspected every two years. In respect of life saving equipment the vessel has to be undertaken a survey every year. In respect of radio equipment and hull, machinery and connected equipment the flag State authority is free to consider which intervals are necessary to keep the accordance of the ship with the set minimum standards.

But not only inspections are mandatory for the compliance of a vessel with SOLAS 74. Furthermore, 'every Company, master and/or responsible officers should remind themselves of the provisions of' SOLAS Regulation 11 of Chapter 1 'Maintenance of condition after survey".[94]

This states, that 'the condition of the ship and its equipment shall be maintained to confirm with the provisions of the present regulations to ensure that the ship in all respects will remain fit to proceed to sea without danger to the ship or persons on board'.

This regulation means, that a vessel has to be maintained properly, so it keeps the standard it had when it was last time inspected or the time the certificate has been issued.

Of course, the 'normal wear and tear resulting in deterioration of the overall standards pending on ships age, should be kept in mind when inspections are carried out'.[95] Anyway, it is the master's and/or responsible officer's duty to maintain the ship always on the highest possible level. They should constantly consider if any of the safety relevant items on board could be problematic to match with the issued

[93] http://www.mss-int.com/solas.html visited 13.01.2010.
[94] DNV Guide on Port State Control, at 5.
[95] ibid, at 5.

certificate and as a consequence repair or replace it. They should also keep in mind, that their vessel could be inspected at any time by port State control authorities.

To point up, which aspects and items of equipment are important with regard to SOLAS 74, the issued certificates shall be presented.
Regulation 12, chapter 1 contains a list of certificates that have to be carried by various ship types and are mostly issued by the flag States.[96]
As already mentioned, it has to be distinguished between certain types of vessels. Mainly, there are
- Passenger ships
- Dry cargo ships
- Oil tankers
- Bulk carriers
- Chemical tankers
- Liquefied Gas Carriers.[97]

Following, an overview shall be given, which certificates subject to SOLAS 74 shall be carried on board a ship and are to be inspected by port State control authorities:

- Passenger Ship Safety Certificate (PSSC): only passenger ships, regulation 7 chapter 1
- Cargo Ship Safety Construction Certificate (SAFCON): all ships except passenger ships, regulation 10 chapter 1
- Cargo Ship Safety Equipment Certificate (CSSEC): all ships except passenger ships, regulation 8 chapter 1
- Cargo Ship Safety Radio Radiotelegraphy Certificate and Cargo Ship Radio Telephony Certificate (SRC RAD): all ships except passenger ships, chapter 4
- Cargo Ship Safety Certificate (CSSC-HSSC): regulations 8,9,10 chapter 1
- Exemption Certificate (EXMC): all ships, regulation 4 chapter 1
- Document of Compliance (DOC/IMDG): only dry cargo ships, regulation 54 chapter 2
- International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk (ICLFCLGB): only liquefied gas carriers, chapter 7 (implements the IGC-Code)

[96] http://www.mss-int.com/solas.html visited 13.01.2010.
[97] DNV Guide on Port State Control, at 9.

- Minimum Safe Manning Document; Certificates of Competency (MSMD): all ships, regulation 13 chapter 5
- Approved Stability information (ASTABI): all ships, regulation 22, chapter 2-1
- Safety Management Certificate (ISMC): all ships except dry cargo ships, regulation 4 chapter 9 (implements the ISM-Code[98])
- Classification Certificate of the hull, electrical and machinery installations issued by the classification society if the ship is classed (CSHMIC): all ships, regulation 7,10 chapter 1
- Valid Certificate for inflatable life-rafts and Free-Float release equipment (CILF/FFR): all ships, regulation 19.8, 19.9 chapter 3
- Valid Certificate for fixed fire-fighting equipment (CFFFEQ): all ships, regulation 7 and 10 chapter 1
- Dangerous goods manifest or stowage plan (DGMSP): passenger and dry cargo ships, regulation 5(5) chapter 7
- Approved cargo securing manual (ACSM): passenger and dry cargo ships, regulation 5.6 of chapter 6 and 7

Again, it shows that the required Certificates cover nearly every vulnerable area of a ship. It also takes into account, as the inspection guidelines for PSCOs, that different kind of ships require different kind of attention regarding safety installations. It therefore can be said, that the guidelines for port State control inspections are equivalent to the issued certificates. This is an indicator for the effectiveness of modern port State control.

cc) Criteria for detention

Under regulation 19, Chapter 1, PSCOs are given the right to inspect foreign ships to ensure that they carry valid safety certificates. In general, these certificates are accepted as proof of compliance with safety standards. However, the PSCO's are allowed to take further actions in cases the required standards are not available. The PSCO can hold back a vessel from sailing as long it is not assured, that the vessel can proceed to sea "without danger to its passengers or crew, if there are clear grounds for believing that the condition of the ship and its equipment does not

[98] see below section about ISM Code.

correspond substantially with the particulars of the certificate(s) carried by the ship, or if the certificate has expired or ceased to be valid."[99] In that case, the flag state has But, as we have seen, detaining a vessel can have serious consequences for a port State authority. Even though, PSCOs were given the right to detain a vessel, former it was hard for them to decide which deficiencies were serious enough for a detention.

To give the PSCO some assistance in deciding whether to detain a vessel or not, the Paris MoU created a set of criteria and factors to consider. Because, as described, the Paris MoU has been the first one, it can be said, that it set many standards that other MoUs took as a mark for orientation.

The "criteria for detention", created by the Paris MoU, shall be presented below, to give an impression, when a PSCO should hold back a vessel from sailing in practice:

"When a PSCO decides if a vessel should be detained, the following factors must be considered, i.e. whether the ship:

- has relevant valid documentation;
- has the ship suitable and sufficient crew as required in the minimum safe manning document.

During an inspection the PSCO must also assess whether the ship and/or the crew is able to carry out the following tasks during the forthcoming voyage:

- safe navigation;
- safely handle, carry and monitor the condition of the cargo;
- operate the engine room safely;
- maintain proper propulsion and steering;
- fight effectively fires in any part of the ship;
- abandon ship speedily and safely and effect rescue if necessary;
- prevent pollution of the environment;
- maintain stability;
- maintain water-tight integrity;
- communicate in distress situations;
- provide safe and healthy conditions on board."[100]

[99] ZO Özcayir (note 41) at 4.7.
[100] P Anderson (note 70) at 66.

If any of the above listed criteria is not fulfilled, the PSCO must consider to detain the vessel. Also, the combination of minor deficiencies may lead to a detention.

The Paris MoU also gives a number of further criteria which may be, in case of non-compliance, ground for considering a detention. These are:

- "propulsion, essential machinery as well as electrical installations;
- engine room cleanliness including bilges, engine room lagging, and the correct operation of bilge pumping arrangements;
- emergency generator, lighting batteries and switches;
- main and auxiliary steering gear;
- personal life saving appliances;
- fire fighting and detection equipment- fire fighting equipment on the cargo areas of tankers;
- navigation lights, shapes or sound signals;
- radio equipment; navigation equipment; charts and other relevant nautical publications;
- non-sparking exhaust ventilation for cargo pump rooms."[101]

Again, these guidelines show that it is the biggest concern of the international maritime community, not only to make vessels safe themselves, but also to ensure that crews are competent enough to handle the ship even in complicated situations. As mentioned above, SOLAS 74 aimed only to ensure the safety of the ship itself. The reason, why the "human element" has been introduced to the detention guidelines regarding SOLAS 74, is the implementation of the ISM Code in the conventions chapter IX. Anyway, the ISM Code is becoming to be dealt with later on, as an own section, though it is one of the most important improvements regarding the crew.

After having taken a look on SOLAS 74, another element of maritime safety shall be dealt with, the protection of the environment. The IMO Convention relevant to this topic is MARPOL 73/78 and shall be presented in the next section.

[101] ibid at 67.

b) International Convention for the Prevention of Pollution from Ships 1973, modified by Protocol of 1978 (MARPOL 73/78)

Alongside SOLAS 74, the MARPOL Convention is an important factor regarding ship safety. Anyway, as SOLAS 74 aims to ensure the minimum standard of a vessel's hardware, MARPOL's priority aim is the protection of the environment. In doing so, it defines a set of standards that merchant ships are supposed to match.

aa)History of MARPOL 73/78

In the first half of the 20th Century, oil pollution occurred to be a problem for the international seas. Countries began trying to regulate the spill of oil by domestic legislation. In 1954, the United Kingdom organized a conference on oil pollution which resulted in the adoption of the International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL). But it showed up quite quickly, that OILPOL 54 would not be strong enough to regulate oil pollution under constant growth of oil trade and developments in industrial practices.

In the year 1967, the *Torrey Canyon* ran aground right in front of the English coast and spilled her entire cargo, 120.000 tons of crude oil, into the sea. After this incident it was clear to the IMO, that existing measures are not detailed and strong enough to prevent such disasters and also do not regulate compensations for cleaning costs and environmental damages. The IMO decided in 1969 to hold a conference on a new Convention dealing with international oil pollution. The first held conference in 1973 led to MARPOL.[102]

The 1973 MARPOL Convention and its Protocol of 1978 now nearly cover all aspects of pollution from ships.[103] It came into force in 1983 and superseded the OILPOL 54.[104]

bb) Structure of MARPOL 73/78

MARPOL 73/78 is divided into six Annexes which have since 1978 been modified by amendments.

MARPOL 73/78 consists of

- Annex I: Regulations for the Prevention of Pollution by Oil

[102] www.deck-officer.info/docmarpol.htm.
[103] ZO Özcayir (note 41) at 4.20.
[104] E Gold 'Gard Handbook on Marine Pollution' 2nded 1998, 100.

- Annex II: Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk
- Annex III: Prevention of Pollution by Harmful Substances Carried by Sea in Packages Form
- Annex IV: Prevention of Pollution by Sewage from Ships
- Annex V: Prevention of Pollution by Garbage from Ships
- Annex VI: Prevention of Air Pollution from Ships

The table of contents of MARPOL 73/78 shows, that the Convention not only covers oil pollution caused by ships. Furthermore, it contains rules preventing pollution caused by its cargo, whatever kind, and also pollution caused by the operation of the vessel itself, like garbage and exhaust fumes.

cc)MARPOL 73/78 and port state control

In relation to port State control, Art. 5 of MARPOL is decisive. It states that "a ship required to hold a certificate in accordance with the provisions of the Regulations is subject, while in the ports or off-shore terminals under the jurisdiction of a Party, to inspection by officers duly authorized by that Party."[105] This inspection, according to Art 5 (2) MARPOL, is in general "limited to verifying that there is on board a valid certificate".

These certificates are

- ICFCBCH (International Certificate of Fitness for the Carriage of Dangerous Chemical in Bulk) MARPOL 73/78 Annex II
- IOPP (International Oil Prevention Certificate) MARPOL 73/78 Annex II/5
- IOPP-NOX (International Oil Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk) MARPOL 73/78 Annex II/11
- ORB I (Oil Record Book part 1) MARPOL 73/78 Annex I/20
- ORB II (Oil Record Book part 2) MARPOL 73/78 Annex I/20
- ORBCH (Oil Record Book Chemicals) MARPOL 73/78 Annex II/9
- CRB (Cargo Record Book) MARPOL 73/78 Annex II/9
- SOPEP (Approved Shipboard Oil Pollution Emergency Plan) MARPOL 73/78 Annex I/26
- GRB (Garbage Record Book) MARPOL 73/78 Annex V

[105] Art. 5 (2) MARPOL.

- DGMSP (Dangerous goods manifest or stowage plan) MARPOL 73/78 Annex III/4

An expended inspection is only about to take place in cases where "are grounds for believing that the condition of the ship or its equipment does not correspond substantially with the particulars of that certificate."[106] Also does MARPOL provide in different Annexes regulations that authorise parties to control operational requirements.[107]
Following, a non exhaustive list shall be provided, presenting the scenarios that give clear grounds for an expended inspection:

According to Annex I

- Absence, serious deterioration, or failure of proper operation of the oily-water filtering equipment, the oil discharge monitoring and control system, or the 15 ppm alarm arrangements
- Remaining capacity of slop and/or sludge tank insufficient for the intended voyage
- Oil record book not available
- Unauthorised discharge bypass fitted

According to Annex II

- Absence of Procedures and Arrangements Manual
- Cargo not Categorised
- No cargo record book available
- Transport of oil-like substances without satisfying the requirements or without an appropriately amended certificate
- Unauthorised discharge bypass fitted[108]

However, MARPOL does not provide detailed provisions how such inspections should be carried out. Port State control surveyors will therefore follow the more detailed IMO procedures.
The procedures according to MARPOL infringements are regulated in, earlier described, IMO Assembly Resolution A.787 (19).[109] This resolution shows in detail,

[106] Art 5 (2) MARPOL.
[107] ZO Özcayir (note 41) at 4. 20.
[108] UK P&I Club PSC Guide, at 37.

how inspections referring to MARPOL deficiencies have to be carried out and is to be seen as a guide for port State control inspections.

dd) Criteria for detention

Again, the Paris MoU provides the PSCOs with a number of criteria, which could lead to a detention of a vessel. Since MARPOL 73/78 aims to prevent pollution, these criteria are environment related:

Under Annex I to MARPOL 73/78:

- "absence, serious deterioration or failure of properoperation of the oil-water filtering equipment, the oil discharge monitoring and control system or the 15 parts per million (ppm) alarm arrangements;
- remaining capacity of slop and/or sludge tank insufficient for the intended voyage;
- oil record book not available;
- unauthorised discharge bypass fitted;
- survey report file missing or not in conformity with Reg. 13G(3)(b) of the Convention."[110]

Under Annex II of MARPOL 73/78:

- "absence of the Procedures and Arrangements Manual;
- cargo not categorised;
- no cargo record book available;
- transport of oil-like substances without satisfying the requirements;
- unauthorised discharge bypass fitted."[111]

Under Annex V of MARPOL 73/78

- "absence of garbage management plan;
- no garbage record book available;
- ship's personnel not familiar with disposal/discharge requirements of garbage management plan."[112]

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[109] HS Bang (note 30) at 724.
[110] ZO Özcayir (note 41) at 5.48.
[111] ibid at 5.49.
[112] ibid at 5.50.

As this chapter shows, MARPOL is a strong instrument, to fight pollution caused by ships on the sea. The documentation and certificates needed on board the ships is cargo related as well as related to operation of the ship. The guidelines about detention of a vessel regarding MARPOL 73/78 also show, that the "human element" again is of much importance, as the crew has to be familiar for example with the vessels garbage plan. In history of shipping, it has always been common, to clean cargo holds outside ports. Also garbage has been dispelled while the ship has been on sea. Anyway, in the past decades, cargoes, that have been quite toxic for the environment became more usual to be transported on ships. Especially oil is a serious threat for nature. Nevertheless, dispelling of Garbage became a serious topic. Last but not least, air pollution caused by the huge diesel engines soil the atmosphere. Therefore, it became necessary, to introduce and also constantly improve a regime like MARPOL 73/78 to avoid pollution caused by ships. Today's MARPOL 73/78, as shown before, covers nearly every aspect of pollution that a ship can cause. Anyway, the future will bring up new problems. Therefore, it will necessary, that regimes like MARPOL 73/78 are kept on modified constantly, to satisfy the certain needs of this huge industry.

After having dealt with the environmental aspect of maritime safety, another regime, dealing with the standards of living onboard ships shall be presented. This is the ILO Convention No. 147.

c) ILO Convention No. 147

The International Labour Organization (ILO) mainly tries to set standards regarding working conditions. Of course these standards are of high importance regarding shipping. The working and living conditions have been quite hazardous during the last centuries. Therefore, it is an important aim of the ILO to improve life aboard on ships. Its main instrument regarding this topic is the ILO Convention No. 147 concerning Minimum Standards in Merchant Shipping.

aa)Structure of ILO Convention No. 147

The Merchant Shipping (Minimum Standards) Convention 1976 (ILO Convention No. 147) established minimum standards with regards to safety, working and labour

conditions. The convention applies to all seagoing ships, whether public or private owned excluding sailing vessels and vessels engaged in fishing or whaling.
The ILO Convention No. 147 undertakes member states to introduce domestic laws and regulations laying down

- safety standards, including standards of competency, hours of work and manning, so as to ensure the safety of life on board ship
- appropriate social security measures
- shipboard conditions of employment and shipboard living arrangements.[113]

bb) Application of the ILO Convention No. 147

The Convention is applicable on two forms of enforcement. Firstly, it is applicable on controls carried out by a member in respect on ships registered in its territory (Flag State Control).
Secondly, it is applicable on vessels registered in a foreign State and calling into a port of a member State (Port Sate Control).
As enforced by flag State control, the inspection of vessels and their accordance with the Convention is mandatory. In respect to port State control, there is not a duty of a member State to exercise inspections on foreign vessels.[114]

A Committee of Experts[115] made a list containing several major issues relating to the Conventions application.[116] These issues with emphasis to board safety shall be allegorised:

- "The essential requirement of the Convention in respect of standards of hours of work may be satisfied, at a minimum, by legislation laying down in the light of safety demands a reasonable level of normal daily hours of work at sea for all officers and ratings; and that such legislation should not be limited in application to watch keepers."[117]
- Each member is supposed to "have laws or regulations laying down safety standards; that this obligation I incumbent on the State and cannot be

[113] I Christodoulou-Varotsi, D Pentsov (note 40) at17.
[114] ibid at 22.
[115] ILO Committee of experts, 77th session 'Labour standards on merchant ships, General Survey of Reports on the Merchant Shipping (Minimum Standard) Convention (No. 147), and the Merchant Shipping (improvement of Standards) Recommendation (No. 155), 1976' Geneva 1990.
[116] I Christodoulou-Varotsi, D Pentsov (note 40) at 22.
[117] ibid at 23.

delegated to individuals, including professionals, to be dealt with according to their assessment of what is safe on an ad hoc basis under non- emergency conditions."[118]

- "The use of subjective and imprecise safety criteria such as "reasonable practicability" and normally available rest periods in order to achieve operational flexibility cannot be considered as meaningful safety standards and as fulfilling the States responsibility..."[119]
- Member States are supposes to make sure that ships are "sufficiently manned to ensure the safety of life on board."[120]
- Member States "have an obligation to exercise effective jurisdiction or control over ships in its 'International Register', in respect of safety standards, social security measures ad shipboard conditions of employment and living arrangements..."[121]
- Member States are supposed "to hold an official inquiry into any serious marine casualty involving ships registered in its territory, particularly those involving injury and loss of life, and the final report of such inquiry is normally to be made public."[122]
- Member States "shall have an affirmative duty to institute an investigation upon receipt of the appropriate information, and such investigation shall be mandatory, and not discretionary."[123]
- "The final reports of inquiries into serious marine casualties are normally to be made public."[124]
- In case of taken measures "necessary to rectify any conditions on board which are clearly hazardous to safety or health, the member shall forthwith notify the nearest maritime, consular or diplomatic representative of the flag State and shall, if possible, have such representative present."[125] This shall prevent unreasonable detention or delay of the vessel.[126]

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[118] ibid, at 23.
[119] ibid, at 23.
[120] ibid, at 23.
[121] ibid, at 24.
[122] ibid, at 25.
[123] ibid, at 25.
[124] ibid. at 26.
[125] ibid, at 26.
[126] ibid, at 22.

This list shows the main methods in ensuring the safety on board of ships regarding working conditions. It contains a variety of duties, member states of the ILO Convention have to fulfil to provide for their seafaring personnel better work conditions.

cc)Role of the ILO Convention No. 147 within the ILO

The ILO Convention No. 147 can be seen as a frame to other ILO Conventions dealing with labour conditions on maritime vessels. The Conventions appendix contains a list of other ILO Conventions, which supersede the Convention No. 147, as far as they are ratified by the member state. In case, the member state has not ratified the more special Convention, ILO Convention No. 147 stays the leading standard Convention.[127]

The way inspections, based on this convention, should be carried out is regulated in the ILO publication 'Inspection of Labour Conditions on Board Ship: Guidelines for Procedure.' [128] According to Art. 4 (1) of the Convention, action can be taken against vessels that are in breach of the minimum standards of the Convention in form of 'a report addressed to the government of the country in which the ship is registered,[...], and [PSCOs] may take measures necessary to rectify any conditions on board which are clearly hazardous to safety and health.'

dd) Detention under ILO Convention No. 147

There are several Grounds for detentions under ILO Convention No. 147 in connection with other ILO Conventions. These can be:

- "insufficient food or voyage to next port;
- insufficient potable water for voyage to next port;
- excessively unsanitary conditions on board;
- no heating in accommodation of a ship operating in areas where temperatures may be excessively low;
- excessive garbage, blockage by equipment or cargo, or otherwise unsafe conditions in passageways/ accommodation;
- clear evidence that watchkeeping and other duty personnel for the first watch or subsequent relieving watches are impaired by fatigue."[129]

[127] ibid at 17.
[128] ZO Özcayir (note 41) at 4.23.
[129] ibid at 5.52.

The overview about ILO Convention 147 shows, that since its adoption the life of seafarers is supposed to improve. Jobs on seagoing ships have always been attractive for people, as the wages have been considerably higher then jobs on land. Anyway, not so long ago, seafarers lived under quite horrible conditions while on sea. Even modern shipping companies changed this long time ago, there are still ships providing no way of accurate standard. Especially ships from the above discussed "informal sector" are partial extremely run down and a threat to health and life of their crew. As shown above, the ILO Convention is a strong medicine against the poor conditions until today a high number of seafarers have to live in. If a PSCO has the impression, that e.g. hygienic standards, safety equipment or cargo security could be a threat or the employees, he has the opportunity to detain the vessel. Therefore, if port state control is carried out worldwide the way it should be, working conditions for seafarers will intensely improve and ships, being a threat to their own crew could be history.

d) International Convention on Load Lines 1966

aa) History of the International Convention on Load Lines 1966

The International Convention on Load Lines relies on the British Merchant Shipping Act of 1876. The British Merchant Shipping Act is the result of an initiative of the British Member of Parliament Samuel Plimsoll[130] who could therefore be seen as the agitator of the Introduction of Load Lines to Merchant Ships. The aim of the International Convention in Load Lines was "to establish uniform principles and rules regarding the limits to which ships on international voyages may be loaded, having regard to the need for safeguarding life and property at sea".[131]

bb) Application of the International Convention on Load Lines 1966

The Convention generally applies to ships engaged in international voyages according to Art. 4 (2). Art. 5 lists up several exceptions like ships of war, new ships of less then 24 meters in length, pleasure yachts and existing ships of less then 150 tons gross. The Load Line Convention introduced an International Load Line on each

[130] JE Hare (note 20) at 319.
[131] ZO Özcayir (note 41) at 4.19.

side of the hull of merchant ships that indicates the limit to which extends it may be loaded.[132] The load line distinguishes between several world zones.
Art. 21 of the Convention states that ships may be inspected and Certificates may be controlled. If the ship has a valid load line certificate, the inspection shall be limited to aspects ensuring that:

- the ship is not loaded beyond the limits allowed by the certificate;
- the position of the load line of the ship corresponds with the certificate; and
- the ship has not been so materially altered [...]that the ship is manifestly unfit to proceed to sea without danger to human life."[133]

cc) Detention under the International Convention on Load Lines 1966

There are certain criteria under the International Convention on Load Lines 1966 which may empower the PSCO to detain a vessel. This can be:

- "significant areas of damage or corrosion, or pitting of plating and associated stiffening in decks and hull effecting seaworthiness or strength to take local loads, unless proper temporary repairs for a voyage to a port or permanent repairs have been carried out;
- a recognised case of insufficient stability;
- absence of sufficient and reliable information, in an approved form, which by rapid and simple means enables the master to arrange for the loading and ballasting of his ship in such a way that a safe margin of stability is maintained at unacceptable stresses in the ship's structure is avoided;
- absence, substantial deterioration or defective closing devices, hatch closing arrangements and watertight doors;
- overloading;
- absence of, or impossibility of reading, draught mark[134]."[135]

The international Load Line Convention covers a mixture between the "hardware", namely the ship itself, as well as the "software", the crew. A strong problem in history of shipping has been failure of loading. This can have many facets.

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[132] ibid at 4.19.
[133] Art. 21 (1) Load Line Convention 66.
[134] The draught mark can be found at the bow of a ship, containing the Load Lines for the several world zones.
[135] ZO Özcayir (note 41) at 5.47.

Firstly, the ships loading and cargo securing devices can be badly maintained. Cases, in which badly conditioned lashings caused losses of containers or leaking hatch covers leaded to dangerous situations, happen numerously every year.
Secondly, overloading has been a serious toping since the beginning of shipping. The aim to carry as much cargo as possible per voyage was cause for tragic losses of ships over century. Also time pressure leads to the fact that crews are supposed to stow cargo as quick as possible, which can result in a disaster.
An example for a combination of these factors has been the drowning of the last German seagoing cargocarrying training ship under sail, the *Pamir*. On her way back to Hamburg, the *Pamir* has been surprised by Hurricane Carrie on 21st September 1957. Two problems occurred: On the one hand, the barley loaded has not been stowed in sacks but loose in the hatches. On the other hand, the ship has been overloaded, even the stability tanks in the bottom have been filled with barley. Therefore, the tanks could not be flooded. In the storm, the cargo, loose barley, shifted to the port side and the ship took over. 80 of the 86 sailors drowned, 45 of them have been younger then 18.
Having a look on the guidelines for detention under the Load Line Convention, it is very likely, that the *Pamir* would have been detained for several reasons today and the sailors would have been saved. This shows, that as far port State control is carried out seriously, horrible incidents can be avoided and one of the main reasons of ship losses, shifting cargo and overloading can be terminated.

The next section is about to deal with the "software" of shipping, the "human element". As it occurred, and been explained above, maritime safety is not only a matter of safe ships, but also of competent crews.

e) International Convention on Tonnage Measurement of Ships 1969 (Tonnage 1969)

The International Convention on Tonnage Measurement of Ships 1969 deals with the determination of tonnage of vessels. It shows up which Convention applies to which kind of ship.[136] Art. 12 of the Convention authorises port state control authorities to inspect the tonnage certificates. But it also limits this inspection to the extend

[136] ibid at 4.22.

- "that the ship is provided with a valid International Tonnage Certificate (1969); and
- that the main characteristics of the ship correspond to the data given in the certificate."[137]

It also limits the inspections to the extend that the exercise of an inspection shall in no case cause any delay of a ship.[138] Guidelines concerning port state control under the tonnage convention have been added by the latest version of the IMO Resolution A. 787 (19).

f) International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 (STCW 1978)

aa) History of STCW 1978

The STCW 1978 was the first Convention that did not deal with the condition and safety of the vessel, but with the ability of the crew to handle the ship safe and manage dangerous situations. It therefore established "basic requirements on training, certification and watchkeeping on an international level." Before STCW 1978, training and safety of vessels was a matter of the individual countries often without reference and comparison to practices in other Sates. This led to a variety of different standards and procedures. Because shipping is one of the most international industries in the world, it has been held necessary to prescribe international standards relating to training, certification and watchkeeping for seafarers.[139]

The STCW 1978 has an important meaning with regards to port State control. One important feature of the Convention is its appliance to vessels of non-party States when visiting ports of states that are parties to the STCW 1978.
Under Art. X, PSCOs are given the right to verify that personnel on board a ship is in hold of the appropriate certificates.[140] This right refers to ships of all flags, with no regard if the flag State is party to the Convention or not. This feature led to the great acceptance of the STCW Convention, because it enables port State authorities to ensure that ships entering their ports are properly manned. By December 2000, 135

[137] Art. 12 (1) Tonnage Convention 69.
[138] Art. 12 (2) Tonnage Convention 69.
[139] http://www.imo.org/Conventions/mainframe.asp?topic_id=257 visited 10.02.2010.
[140] ZO Özcayir (note 41) at 4.21.

States implemented the STCW 1978. These parties represent 97,53 percent of the world shipping tonnage.[141]

Since then, the STCW 1978 has been updated by a number of amendments.

bb) 1995 amendments

The 1995 amendments that entered into force on 1st February 1997, has an important meaning regarding port State control.[142]

Since the 1995 amendments, the legal basis for port State control inspections has been strengthened. Especially Regulation 4 in the modified Chapter XI "contains very precise control procedures, including specification of clear grounds for believing that appropriate standards are not being maintained."[143] According this Article, the PSCO might detain a vessel in case

- the vessel "has been involved in a collision, grounding or stranding, or
- there has been a discharge of substances from the ship when underway, at anchor or at berth which is illegal under any international Conventions, or
- the ship has been manoeuvred in an erratic or unsafe manner whereby routing measures adopted by IMO or safe navigation practices and procedures have not been followed, or
- the ship is otherwise being operated in such manner to pose a danger to persons, property or the environment"

and if the PSCO holds, that these occurrences were a result of or related to a lack of competence, i.e. that crew members do not match the set requirements of the STCW 1978. [144]

Also new under the 1995 amendments are measures or watchkeeping personnel to prevent fatigue. Therefore, every ship has to hold records of hours of work and rest periods in form of watch schedules. If these schedules have not been followed for what so ever reason, it has to be recorded in the ship log-book. Furthermore, countries that are party to the STCW 1978 are supposed to create procedures to

[141] http://www.imo.org/Conventions/mainframe.asp?topic_id=257 visited 10.02.2010.
[142] ibid.
[143] UK P&I Club PSC Guide, at 7.
[144] DNV Guide on Port State Control, at 23

investigate actions of persons that create a danger to safety or the environment, to whom they issued certificates.[145] Also simulators for training and assessment purposes have been introduced into STCW 1978 by the 1995 amendments. The use of simulators is mandatory with regards to radar[146] and automatic radar plotting aids[147]. Since the amendments of 1995, every flag State that is party of the Convention has to introduce a quality standard system ensuring that training, certification and other procedures of their seafarers are constantly monitored[148]. Leading crew members, such as the master, officers and radio operators, are required at intervals not exceeding five years to absolve a fitness test and to renew their certificate for professional competence.[149]

cc)1997 amendments

The 1997 amendments that came into force on 1st January 1999 object training and qualification on passenger ships other then ro-ro ferries. These qualifications are covering crowd management training, familiarization training, safety training for personnel providing direct service to passengers in passenger spaces, passenger safety, crisis management and human behaviour training.[150]

dd) 1998 Amendments

The 1998 amendments that entered into force on 1st January 2003 aimed at improving crew competence relating to cargo securing as well as loading and unloading on bulk carriers.[151]

ee)2006 Amendments

The 2006 Amendments that entered into force on 1st January 2008 introduced the need for personnel designated as ship security officers (SSOs). These SSOs need to absolve special trainings and earn certifications.[152]

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[145] http://www.imo.org/Conventions/mainframe.asp?topic_id=257 visited 10.02.2010.
[146] Regulation I/12 STCW 1978/1995.
[147] Section A-I/12 STCW 1978/1995.
[148] Regulation I/8 STCW 1978/1995.
[149] Regulation I/11 STCW 1978/1995.
[150] http://www.imo.org/Conventions/mainframe.asp?topic_id=257 visited 10.02.2010.
[151] ibid.
[152] ibid.

This shows, how the STCW 1978 has been constantly updated. It now takes account also on modern training methods such as simulators. It is therefore of very high importance regarding the competence of crews.

ff) White List

The White List published by the IMO is a list of countries that have given full effect to the 1995 amendments.

It is expected by the IMO that vessels flying the flag of states that are not on the white list, will be subject to an increased number of more detailed inspections. The Secretary-General of the IMO said "certificates issued by countries not included in the list will not be accepted as prima facia evidence that the holders have been trained and meet the standards of competency required by the convention."[153]

Furthermore, the IMO stated, that it also might be possible that white listed flag States may refuse seafarers with certificates from non white list States to work on their vessels.[154]

Currently, following States are on the white list and have therefore given full effect to the 1995 amendments:

[153] UK P&I Club PSC Guide, at 7.

[154] http://www.imo.org/newsroom/mainframe.asp?topic_id=68&doc_id=513 visited 10. February 2010.

Argentina
Australia
Bahamas
Bangladesh
Belgium
Brazil
Bulgaria
Canada
Colombia
Croatia
Cuba
Cyprus
Chile
China
Denmark
Egypt
Estonia
Finland
France
Germany
Ghana
Greece
Honduras
Iceland
India
Indonesia
Ireland
Israel
Italy
Jamaica
Japan
Kiribati
Latvia
Liberia
Luxembourg
Malaysia
Maldives
Malta
Marshall Islands
Mexico
Morocco
Netherlands
New Zealand
Norway
Pakistan
Panama
Peru
Philippines
Poland
Portugal
Republic of Korea
Romania
Russian Federation
Samoa
Singapore
South Africa
Spain
Sri Lanka
Sweden
Thailand
Tonga
Trinidad and Tobago
Turkey
Tuvalu
Ukraine
United Kingdom
Uruguay
USA
Vanuatu
Venezuela
Viet Nam[155]

[155] White list at 6th December 2000.

gg) detention under STCW 78

The Paris MoU provides its parties with guidelines, in which cases it shall be considered to detain a vessel under the STCW 78:

- "failure of seafarers to hold a certificate, to have an appropriate certificate, to have a valid dispensation, or to provide documentary proof that an application for an endorsement has been submitted to the flag state administration;
- failure to comply with the applicable safe manning requirements of the flag state administration;
- failure of navigational or engineering watch arrangements to conform to the requirements specified for the ship by the flag state administration;
- absence in a watch of a person qualified to operate equipment essential to safe navigation, safety radiocommunications or the prevention of marine pollution;
- failure to provide proof of professional proficiency for the duties assigned to seafarers for the safety of the ship and the prevention of pollution;
- inability to provide for the first watch at the commencement of a voyage and for subsequent relieving watches persons who are sufficiently rested and otherwise fit for duty."[156]

STCW 1978 especially with its 1995 amendments have been the first step to set minimum standards for crew competence and not only the safety of the ship itself. As shown, master and crew have to carry certain documents proving that they are able to fulfil their duties on board properly. Therefore, as far port State control is carried out properly, times when untrained people were able to sign on a ships crew, should be over.
STCW 1978 again shows, that ship safety is not only a matter of safe "hardware" in shipping, but also a matter of competence related to a ship's "software", the crew.

Also dealing with the "human element" is the above mentioned ISM Code. As StCW sets standards in crew competence, the ISM Code aims to increase ship safety by making emergency plans on board ships mandatory.

[156] ZO Özcayir (note 41) at 5.51.

g) ISM Code

The ISM Code aims on the "software" problem in shipping. Also, an important side effect of the ISM Code is the prevention of pollution.

aa)History of the ISM Code

In the second half of the 1980s and the beginning of the 1990s the rate of maritime accidents seemed to explode.[157] From 1987 until 1990 P&I insurance claims rose on average over 200 per cent. In 1988 the UK Department of Transport commissioned a report with the title "The Human Element in Shipping Casualties". Also the P&I club United Kingdom Mutual Steamship Assurance Association issued an "Analysis of Major Claims". Last but not least, the House of Lords Select Committee on Science and Technology published a report with the title "Safety Aspects of Ship Design and Technology".[158]

All reports had one conclusion in common: One of the major faults related to all accidents was human error. The House of Lords report stated, "that four out of five ship casualties- 80%- are due to human error [...]."

Since then, domestic as well as international guidelines have been drafted, to improve management practice in safe ship operations. But only after the *Scandinavian Star* incident, the IMO Assembly adopted resolution A.741 (18). This Resolution constituted the "International Management Code for the Safe Operation of Ships and for Pollution Prevention (International Safety Management Code - ISM Code).

On 4th November 1993 the ISM Code has been adopted as a new Chapter IX of SOLAS. On 1st June 1998 the Code came into force in respect of passenger ships, oil tankers, chemical tankers, gas tankers, bulk carriers and high speed cargo

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[157] 1987: *Herald of Free Enterprise* capsized off Zeebrugge
1987: Ferry *Dona Paz* collided with tanker in the Philippines, 4.386 people killed
1989: *Exxon Valdez* ran aground off the coast of Alaska, spilling 40.000 tons of crude oil
1990: *Scandinavian Star* catched fire
1991: Tanker *Agip Abruzzo* collides with ferry *Moby Princess*; fire, pollution and 143 persons killed
1991: *Haven* catched fire and exploded of Genoa
1991: Ferry *Salem Express* sunk. 470 people drowned
1992: *Aegean Sea* cracked off La Coruna
1993: *Braer* ran aground off Shetland Islands
1994: Ferry *Estonia* sank; 852 people died
1996: *Sea Empress* caused oil pollution off UK.

[158] P Anderson (note 70) at 16.

vessels with a GRT of more than 500 and became mandatory for all companies operating ships on international voyages from 1st July 2002.[159]

The International Management Code for the Safe Operation of Ships and for Pollution Prevention has been developed by the IMO in 1994. [160] The aim of the ISM Code is to "provide an international standard for the safe management and operation of ships and for pollution prevention".[161] The code has been designed to make ships safer places to work, to protect the environment and also to define operational duties on board of a vessel. [162] The ratio of the Code is "the consideration of crew negligence, ineffective management and lack of communication between the vessel and shore-based management as factors determining marine casualties." [163] The preamble of the ISM Code states, that it is necessary to bear in mind that "the cornerstone of good safety management is commitment from the top. In matters of safety and pollution prevention it is the commitment, competence, attitudes and motivation of individuals at all levels that determines the end result."[164] It is therefore to mention, that the ISM Code focuses on ship owning companies rather then on flag States.[165]

Every ship owning company should develop, implement and maintain binding plans for every kind of operation on board. This plan is called 'safety management system' (SMS). The SMS contains guidelines which include "functional requirements such as safety and environmental protection policy, instructions and procedures in view of the safe operation of the ship, defined levels of authority and lines of communication between, and amongst, shore and shipboard personnel, procedures for internal audits and management reviews."[166] Everybody in the company has to be aware of the rules stated by this SMS. Also does every company need employees that are designated to monitor all safety matters on board their ships. [167] Moreover, the Company is responsible to provide enough resources and adequate shore-based support, to ensure that the above mentioned designated employees in charge of

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[159] I Christodoulou-Varotsi, D Pentsov (note 40) at 640.
[160] E Gold (note 104) at 319.
[161] Preamble 1 of the ISM Code.
[162] E Gold (note 104) at 320.
[163] I Christodoulou-Varotsi, D Pentsov (note 40) at 641.
[164] Preamble 6 of the ISM Code.
[165] DB Stevenson 'Tanker Crew Fatigue: Some New Solutions to an Old Problem' 27 Journal on Maritime Law and Commerce 1996, 453 at 463.
[166] I Christodoulou-Varotsi, D Pentsov (note 40) at 641.
[167] E Gold (note 104) at 321.

safety are able to carry out their functions.[168] Also, the company has to "clearly define and document the master's responsibility" [169] with regards to the company's implementation of the safety and environmental-protection policy. Nevertheless, the company has to make sure, that the master "is properly qualified for command, conversant with the company's SMS and provided adequate support for the execution of its duties.[170]

Besides the SMS, there are certain other documents to be issued by the company. The document that is supposed to be created by the ship owning company to describe and implement the SMS in the company is called Safety Management Manual (SMM).

With regards to port State control, a Safety Management Certificate (SMC) shall be issued to the ship and the Company shall be issued a Document of Compliance (DOC) relevant to that ship.[171]

Furthermore, the ISM-Code has important legal effects.

bb) Criminal liability

The ISM Code could have effect on the shipowners criminal liability in two different ways. Firstly, due the vast amount of information that has be collected to create an SMS, investigators and prosecutors are able to find weaknesses in the company's structure. Moreover, the Safety Management System has been called a "road map" for investigations and judicial proceedings.[172]

Secondly, companies might exculpate themselves from criminal charges by presenting proper safety records and present themselves as responsible operators which intent to comply with the law and prevent pollution. Especially for foreign shipping companies, this can be quite advantageous against distrustful prosecutors.[173]

cc)Civil Liability

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[168] I Christodoulou-Varotsi, D Pentsov (note 40) at 642.
[169] Paragraph 5 ISM Code.
[170] I Christodoulou-Varotsi, D Pentsov (note 40) at 642.
[171] ibid at 641.
[172] L Crick Sahatjian 'The ISM Code: a Brief Overview' 29 Journal on Maritime Law and Commerce 1998, 405 at 407.
[173] ibid at 408.

The ISM Code might also affect the ship owner's liability under the Hague, Hague-Visby, Hamburg and Rotterdam Rules. Especially regarding the carrier's duty to carry out due diligence and the limitation of lability.[174]
Moreover, the ISM Code's requirements that "the Company should ensure that each ship is manned with qualified, certificated and medically fit seafarers..."[175] and that "the Company should ensure that all personnel involved in the Company's SMS have an adequate understanding of the relevant rules, regulations, codes and guidelines"[176] and that "the Company should establish procedures by which the ship's personnel receive relevant information in the SMS in a working language or languages understood by them"[177], might create new and further going standards for exercising due diligence.

After the above said, the ISM Code plays an important role regarding maritime safety. As chapter of SOLAS 74 it is the connecting element between a safe ship and its crew. While SOLAS 74 is supposed to ensure, that life saving equipment is on board and documented, the ISM Code aims to ensure that the crew is also trained and able to use this equipment in cases of emergency.
Also the connection between the crew and the on-shore personnel is strengthened by the ISM Code. Of course, the ISM Code entails a lot of new duties for the master and his crew, but they do directly benefit from the plus of safety and personnel competence.
Also relating to Carriage of Goods by Sea, the ISM Code is relevant. As shown, it arouses liability in civil as well as criminal matters.
Concluding, it can be said, that the ISM Code was, next to the STCW, the most important safety innovation of the recent decades with regard to the "human element" in shipping.

After the legal bases of port State control, the structure of Memoranda of Understandings shall be presented, as they build the practical frame for carrying out port State inspections.

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[174] I Christodoulou-Varotsi, D Pentsov (note 40) at 644.
[175] Paragraph 6.2 ISM Code.
[176] Paragraph 6.4 ISM Code.
[177] Paragraph 6.6 ISM Code.

II. Memoranda of Understanding (MoUs)

As the international Conventions, as shown above, build the legal frame for port State control, the coordination of the inspections has been organized between several States in a region by forming so called Memoranda of Understanding (MoUs).[178] At present, nine regional MoUs geographically cover nearly every region in the world.[179] It was necessary for the success of port State control, that specific information gained about particular vessels, owners and their operators were shared between the port State authorities. The reason for this is firstly, that vessels should not be inspected in every port they enter and secondly, that maritime States are forewarned before a foreign vessel accesses their ports.[180]

The intention of MoUs is not to enlarge the scope of existing conventions.[181] Furthermore, the simply aim of MoUs is to coordinate the competence they already have under existing international Conventions.[182] The regional MoUs encourage their members to inspect foreign vessels so it is ensured that these are "equipped, crewed and operated in compliance with the standards set by the relevant international treaties."[183] Moreover, the MoUs aim to eliminate the so-called 'port shopping'. This phenomenon arises where there is a discrepancy between different ports.[184] This means that one port handles port State inspections less careful then another and is therefore favoured by sub-standard ships. Also, the MoUs aim to enhance the efficiency of port State inspections and the reduction of the burden of reiterating inspections of foreign vessels.[185]

MoUs also started several campaigns, focusing on certain measurements or ship types. These campaigns are called CIC (concentrated inspection campaign).[186] The so far conducted campaigns have been about Bulk Carriers (2001), STCW (2002), ISM Code (2003), ISPS Code (2004), MARPOL Annex I (2006), ISM Code (2007), Chapter V of SOLAS (2008) or Chapter III of SOLAS (2009). These CIC are often conceived as joint ventures between several MoUs. This shows, how connected the work between the MoUs already is and that data is not only exchanged within a MoU.

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[178] HS Bang (note 30) at 725.
[179] Ibid at 726.
[180] JE Hare (note 33) at 577.
[181] ZO Özcayir (note 39) at 5.5.
[182] HS Bang (note 30) at 727.
[183] TL McDorman 'Regional Port State Control Agreements: Some issues of International Law' 5 Ocean and Coastal Law Journal 2000, 207 at 209.
[184] HS Bang (note 30) at 726.
[185] ibid at 726.
[186] http://www.acuerdolatino.int.ar/ visited 30.01.2010.

1. Structure of Memoranda of Understanding

MoUs usually have three main departments. Firstly the Port State Control Committee, secondly the Secretariat and thirdly the Information Centre.

The Committee is the executive body of an MoU and comprises the representatives of the member states. It is usually convened once a year. Shorter intervals can be arranged if necessary. The committee makes operative regulations for itself, the Secretariat and the Information Centre, holds seminars for inspectors, harmonises inspections and sets guidelines to carry out inspections and procedures for the Information System.

The Secretariat is the supporting department of the Committee and operates the Information Centre. [187]

2. Paris MoU

The first signed MoU has been the Paris MoU in 1982. It currently consists of 27 participating maritime states.[188] "It covers the waters of European coastal states and the North Atlantic basin from North America to Europe."[189]

a) Principles of the Paris MoU

The Paris MoU stated a number of basic principles, to which the member states commit themselves.

Firstly, the general responsibility for compliance with the provisions of the relevant instruments lies with the ship owner/operator. The flag State has to ensure this compliance. Another principle is that every member State has to give effect to the provisions of the Paris MoU. [190] Furthermore, each authority has to ensure that foreign merchant ships comply with the standards ascertained by the relevant Conventions. [191] The Paris MoU also requests its member States to inspect 25 per cent of the estimated number of individual foreign merchant ships.[192]

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[187] HS Bang (note 30) at 727.
[188] www.parismou.org visited: 29.01.2010.
[189] ZO Özcayir (note 41) at 5.3.
[190] Section 1.1 Paris MOU.
[191] Section 1.2 Paris MOU
these are (According to Section 2.1 Paris MOU):
1. International Convention on Load Lines 66 (Protocol 88)
2. International Convention for Safety of Life at Sea 74 (SOLAS) (Protocol 78 & 88)
3. International Convention for the Prevention of Pollution from Ships 73 (MARPOL) (Protocol 78)

This inspection rate is called "target rate". Even though the target rate under the Paris MoU is 25 %, this has been achieved the first time in 1993[193] and has since then been reached every year except 1996.[194] During the first years of the Paris MoU, the development of port State control differed between the member parties. Whereas some States did not have problems even to match the 40 % boundary, others did not have the manpower or the necessary funds to comply with these commitments. This situation changed since 1986 so that most of the member States provide the necessary budgets for their port State control systems.[195] Furthermore, the 25 % target rate is mandatory since 1996 for EU Member States. This has been achieved by the EC Council Directive 95/21/EC on Port State Control.[196]

b) port state control inspection procedures

Targeting is also a measurement for PSCOs to avoid that well-managed ships are inspected more often then vessels with lower standards. Therefore, PSCOs are supposed to rank ships under the Paris MoU. This ranking results in a so called "Targeting Factor" and is calculated in the central Paris MoU port state control database "Sirenac".

Basically, the "Targeting Factor" has two purposes. Firstly, the "Targeting Factor" shall help port State control authorities to assess the risk to improve focusing their limited resources on the worst ships. Secondly, to send a signal to ship owners, that the number of inspections on board a ship can be lowered by improving the performance of the ship, flag and Classification Society.[197]

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4. International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 78 (STCW)
5. Convention on the International Regulations for Preventing Collisions at Sea 72 (COLREG 72)
6. International Convention on Tonnage Measurement of Ships 69 (Tonnage 69)
7. ILO Convention No. 147 (Protocol 96)
8. International Convention on Civil Liability for Oil Pollution Damage 92 (CLC)
9. International Convention on the Control of Harmful Anti-Fouling Systems on Ships 2001(AFS 2001)
10. International Convention on Civil Liability for Bunker Oil Pollution 2001 (Bunkers 2001).

[192] Section 1.3 Paris MOU.

[193] ZO Özcayir (note 41) at 5.8.

[194] HS Bang (note 30) at 731,

[195] Huibers, „Development on Port State Control" 6th Congress of the European Harbour Masters' Association, June 17-22 1996, Reykjavik, Iceland; cited in: ZO Özcayir (note 40) at 5.8.

[196] Council Directive 95/21/EC of 19 June 1995 concerning the enforcement, in respect of shipping using Community ports and sailing in the waters under the jurisdiction of the Member States, of international standards for ship safety, pollution prevention and shipboard living and working conditions (Port State Control). OJ 1995, L 157/1.

[197] ZO Özcayir (note 41) at 5.21.

Subsequently, a short overview, how the targeting system of the Paris MoU works in practice shall be given, to exemplify the practical work of the MoU and its port State authorities.

Following criteria have been stated as being important for the "targeting factor" under the Paris MoU[198]. The targeting system of the Paris MoU generally consists of two modules: Firstly, the generic factor and secondly, the historic factor.

The generic factor is calculated by adding together the elements that form a generic profile of a ship.[199]

- Ships will be inspected, which certificates on ship's construction and equipment, as well as classification certificates have been issued by an organisation not recognised by the port State control authority.
- Ships will be inspected when flying the flag of a State appearing on the black list[200] of the MoU;
- Also ships will be inspected when they have been allowed to leave port only certain conditions, e.g. when a deficiency was supposed to be rectified before departure, at the next port, within 14 days or if other conditions have been specified by the port State control authority. Also in the case deficiencies have been rectified, the ship shall be inspected again;
- Ships shall be inspected when deficiencies have been inspected during previous inspections;
- Also ships, flying a flag of a State that is not party to a relevant international Convention;
- Ships with class deficiency ratio above average;
- Ships that are over 13 years old.

The historic factor is applied on to the generic factor to reflect if the actual condition of the vessel, its flag or its Classification Society has changed. Therefore:

- Those ships will be inspected, which are in a Paris MoU port for the first time or absent for longer then 12 months. For this purpose, the port State control

[198] Annex 1, section 5 Paris MOU
[199] ZO Özcayir (note 41) at 5.22.
[200] The Paris MoU maintains a black, grey and white list, containing flag States depending on the numbers of deficiencies and detentions occurring on their registered vessels.

authorities will rely on the "Sirenac" data and inspect also those vessels, which have not been registered in the "Sirenac" database yet;

- Ships will be inspected, which have not been inspected within the previous six months;
- Ships shall be inspected when they have been detained previously.[201]

Anyway, there are certain incidents, superseding the ranking of the "Sirenac" database.

Such incidents can be

- ships, that have been reported by pilots or port state authorities as having deficiencies;
- ships, carrying dangerous or polluting goods and failed to report all relevant information regarding ships condition and cargo;
- ships, that haven been reported by another authority;
- ships, that have been subject of complaints of the master or a member of the crew regarding shipboard living or working conditions or prevention of pollution;
- ships that have been involved in a collision, grounding, stranding on their way to the port or been manoeuvred in an eratic or unsafe manner or otherwise operated in such a manner as to pose a danger to persons, property or the environment.
- Ships that have been suspended from their class for safety reasons.[202]

Ships that fall under the list of superseding incidents, shall be given priority towards the all other ships to ensure their safety and condition.

Under the Paris MoU, every ship generally shall only be inspected within 6 months of a previous inspection in a MoU port, unless there are clear grounds for an inspection. Nevertheless, unduly detaining or delaying a ship shall be avoided.[203] Also discrimination, as to foreign flags, is forbidden.[204] Anyway, this can mean right the opposite. This principle of "no more favourable treatment" is applied to ships which are registered in a State which is not party to a relevant convention. In that case, the

[201] ZO Özcayir (note 41) at 5.23.
[202] Annex 1, section 1.1 Paris MOU
[203] Section 3.18 Paris MOU.
[204] Section 1.2 Paris MOU.

survey will be carried out after the guidelines for that convention. In other words, for vessels flying the flag of a State not party of one of the relevant Conventions, it is not allowed to have lower standards then vessels registered in States that are party to all relevant Conventions.[205] This is to ensure consistent standards for all ships entering Paris MoU's ports.

It shall be noted that also vessels from other member States are regarded to be foreign flags, too.[206]

Another principle under the Paris MoU states, that each authority shall consult, co-operate and exchange information with the other authorities.[207]

To realise this information exchange, the Paris MoU operates a computerised Information system called Centre Administratif des Affaires Maritimes (CAAM) located in St. Malo.[208] This System is a database that provides every member State with the results of each inspection anywhere in the region.[209] Nevertheless, the port State authorities publicise detention lists in the *Lloyds List* as well as in the internet.[210]

c) Success and development of PSC under the Paris MoU

To illustrate the effect and success of MoUs on port State control, facts regarding number of inspections, found deficiencies and carried out detentions shall be presented.

Anyway, some factors have to be kept in mind. There are always certain variables which can adulterate collected data. For example are deficiencies to be treated in certain ways, depending how serious they really are. Also, the number of Conventions and amendments, as shown, has increased over the years, so that the number of deficiencies could have risen without ships getting worse. Especially, when a new measurement has been adopted, it often needs some time to make the ships conform to it's rules. Nevertheless, as described earlier, some MoUs (Especially the Paris and Tokyo MoU) invented targeting processes. This means, that

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[205] Section 3.8 Paris MOU.
[206] ZO Özcayir (note 41) at 5A.3.
[207] Section 1.4 Paris MOU.
[208] The other MOUs also operate computer based information databases.
[209] ZO Özcayir (note 41) at 5.11.
[210] JE Hare (note 33) at 581.

they are looking especially for sub-standard vessels. Also this procedure could lead to a higher number of deficiencies.[211]

Year	Ships Inspected	Inspections	Deficiencies	Deficiencies per Inspection	Detentions	Detentions in % of inspections
1982/3	6.325	8.839	8.352	0.94	355	4.0
1983/4	7.342	9.847	13.436	1.36	436	4.4
1984	7.686	10.227	14.811	1.45	476	4.7
1985	7.879	10.417	13.342	1.28	356	3.4
1986	8.721	11.740	15.709	1.34	307	2.6
1987	10.337	11.451	16.566	1.45	280	2.4
1988	8.382	11.224	15.110	1.35	295	2.6
1989	9.164	12.459	18.608	1.49	344	2.8
1990	9.842	13.955	22.639	1.62	441	3.2
1991	10.101	14.379	25.930	1.80	525	3,7
1992	10.455	14.783	27.136	1.84	588	4.0
1993	11.252	17.294	43.071	2,49	926	6,4
1994	10.694	16.964	53.210	3.14	1.597	9.4
1995	10.563	16.381	54.451	3.32	1.837	11.2
1996	10.256	16.070	53.967	3.36	1.719	10.7
1997	10.719	16.813	53.311	3.17	1.624	9.7
1998	11.168	17.643	57.831	3.28	1.598	9.1
1999	11.248	18.399	60.670	3.30	1.684	9.2
2000	11.358	18.559	67.735	3.65	1.764	9.5
2001	11.658	18.681	68.756	3.68	1.699	9.1
2002	11.823	19.766	69.079	3.49	1.577	8.0
2003	12.382	20.309	71.928	3.54	1.431	7.0
2004	12.538	20.316	64.113	3.16	1.187	5.8
2005	13.024	21.302	62.434	2.93	994	4.7
2006	13.417	21.566	66.142	3.07	1.174	5.4

[211] RR Churchill 'From Port State to Court State? International Litigation as a Possible Weapon to Combat Sub-standard Ships' Law of the Sea, Environmental Law and Settlement of Disputes: Liber Amicorum Judge Thomas A. Mensah 2007, 899 at 904.

2007	14.178	22.907	75.080	3.28	1.305	5.7
2008	15.239	24.707	83.585	3.38	1.261	5.1
2009	14.761	24.202	72.087	2.98	1.064	4.4

Having a look at the provided data, it shows up, that the number of deficiencies and detentions kind of exploded in the middle of the 1990s starting in 1993. This could have several reasons. Firstly, the described targeting policy of the Paris MoU started in 1993. This means, that PSCOs concentrated especially on vessels with a high targeting factor. Secondly, the introduction of the "timing criterion" in 1994 had influence on the raising deficiencies and detentions.[212] This criterion said that the decision to detain a ship should not be affected by the duration of the ship's call in port, furthermore should be asked "whether the ship would be fit to sail in the condition observed during the inspection"[213] However, the Paris MoU did not see the "timing criterion" as an excuse, it rather stated that "these considerable increases recorded between 1993 and 1994 must not only be viewed as a yardstick for increasing deterioration of the merchant world fleet, but also considered as a result of the ongoing process of improving selection criteria for the inspection of ships and better focusing on the quality of PSC inspections by the parties to the Paris MoU"[214]. Anyway, since 1996, it seems clear, that the number of deficiencies and detentions regarding vessels entering Paris MoU ports drops constantly. Still, the Paris MoU is worried, that "nearly 60 % of inspections result in 6 deficiencies on average and 458 inspections revealed more than 20 deficiencies [...]"[215].

After having presented the Paris MoU in detail, also the other MoUs shall be introduced. Anyway, statistics will be presented were it seems significant, which is case especially regarding the "big" MoUs. As having mentioned before, the Paris MoU as the first one was groundbreaking why most of the later MoUs have a similar structure and method of operation.

3. Acuerdo de Vina del Mar Agreement

[212] HS Bang (note 30) at 730.
[213] 1994 Annual Report of the Paris MOU p.24.
[214] 1994 Annual Report of the Paris MOU p.36.
[215] 2008 Annual Report of the Paris MOU p. 6.

The second MoU, signed in 1992, is the Acuerdo de Vina del Mar Agreement on Port State Control (Vina del Mar). It covers the Latin American maritime authorities.[216] The target rate of this MoU is 20 % per country. Regrettably it is unknown, whether the member States matched the target rate set by the MoU due to lack of data in the annual reports.[217] The reason for this lies in the fact that during 1993 the permanent secretariat of the Latin American region still tried to get the necessary acceptances from the member states to put the MoU into effect.[218] Also, the Vina del Mar MoU aims, that a vessel may not be inspected during the same six months unless deficiencies are detected, it carries dangerous goods or is a passenger ship or bulk carrier.[219]

The performance of the Vina del Mar MoU reads as

Year	Inspections	Deficiencies	Deficiencies per inspection	Detentions	Detention in % of inspections
1997	2.259			92	4.1
1998	2.283			55	2.4
1999	3.584			65	1.8
2000	4.352			148	3.4
2001	3.856	8.197	2.1	136	3.5
2002	4.530	8.917	2.0	151	3.3
2003	4.484	9.072	2.0	127	2.8
2004	5.217	11.786	2.3	98	1.9
2005	5.832	15.166	2.6	133	2.3
2006	6.545	18.235	2.8	119	1.8
2007	6.856	25.996	3.8	229	3.34
2008	7.596	24.776	3.3	190	2.5

Regarding the data of the Vina del Mar MoU it shows that there has been an increase of deficiencies and detentions in 2007. This may have been an indicator for

[216] Argentina, Bolivia, Brazil, Chile Colombia, Cuba, Ecuador, Hoduras, Mexico, Panama, Peru, Uruguay, Venezuela.
[217] HS Bang (note 30) at 738.
[218] ibid at 738.
[219] http://www.acuerdolatino.int.ar/ visited 30.01.2010.

the recession one year later. On the other hand, the 2008 statistics are in average with the former ones. Anyway, having a look on the last annual reports of the Vina del Mar MoU, it shows up, that only Argentina, Brazil and Chile seem to be the only active and engaged parties of the MoU. Therefore, it cannot be said, if substandard ships are entering ports in other South American states or if they really have disappeared.

4. Tokyo MoU

Another Memorandum of Understanding is the in 1993 signed Tokyo MOoU. It covers the Asia-Pacific Region.[220] The original target rate was 50% overall. In 1994 the actual inspection rate was 32 %. In 1995 it rose to 39 % till it reached the target rate in 1996 and the following years. Later, the committee of the Tokyo MoU requested, that member states shall "endeavour to attain" an inspection rate of 75 %.[221]

The Tokyo MoU also runs a computer based information System called APCIS (Asian-Pacific Computerized Information System) which is located in Vladivostok. As the System of the Paris MoU it aims to:

- make information on inspections available for Authorities to assist them in choosing vessels to inspect;
- provide effective information exchange facilities regarding port State control.[222]

The performance of the Tokyo MoU reads as:

Year	Number of Inspections	Number of Deficiencies	Deficiencies per inspection	Number of detention	Detention in % of inspections
1994	8.000	14.464	1.8	282	2.8
1995	8.834	19.326	2.2	524	5.9
1996	12.243	31.600	2.6	689	5.6
1997	12.957	41.456	3.2	830	6.4
1998	14.545	52.351	3.6	1.061	7.3

[220] Australia, Canada, Chile, China, Fiji, Hong Kong, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, Papua New Guinea, Philippines, Russian Federation, Singapore, Thailand, Vanuatu, Vietnam.
[221] ZO Özcayir (note 41) at 5.140.
[222] http://www.tokyo-mou.org/ visited 30.01.2010.

1999	14.931	50.136	3.4	1.071	7.2
2000	16.034	58.435	3.6	1.101	6.9
2001	17.379	69.578	4.0	1.349	7.8
2002	19.588	75.210	3.8	1.307	6.7
2003	20.124	84.119	4.2	1.709	8.5
2004	21.400	73.163	3.4	1.393	6.5
2005	21.058	74.668	3.6	1.097	5.2
2006	21.686	80.556	3.7	1.171	5.4
2007	22.039	83.950	3.8	1.239	6.6
2008	22.149	89.477	4.0	2.530	8.8

The statistic shows, that the number of deficiencies and detentions under the Tokyo MoU was nearly constantly increasing since its start in 1994. The data of 2008 is quite alarming and seems to be the effect of the recession since the middle of 2008. Also, since this data goes the opposite way compared to the Paris MoU, it could an indicator, that sub-standard ships, being banned from Europe, try to get business in Asia.

5. Caribbean MoU

In 1996 the Caribbean MoU has been signed. Each of its members[223] is requested to reach a minimum annual total of 15 % of inspections during the first three years from coming into effect of the Memorandum. The computer based information system of this MoU is the cmic (Carribean Maritime Information Centre) located in Paramaribo Suriname.

Even though, the Caribbean MoU has been introduced in 1996, port State control surveys did not start before 2005. The cmic only has been taken into use in 2005, so that sharing information only could take place since then. As a result, in 2005, only 17 ships have been inspected by all parties together. This number increased in 2006

[223] Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Cuba, Domenica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Netherlands Antilles, Saint Kitts & Nevis, Saint Lucia, Saint Vincent & the Grenadines, Suriname, Trinidad & Tobago, Turks & Caicos Islands.

to an amount of 279. In 2007, already 652 ships have been surveyed. Main players of this MoU seem to be Cuba with 220 (34%) and Trinidad and Tobago with 210 (33%) inspections. Barbados and Antigua had the lowest participation on this MoU, so far. In 2007, they only surveyed 4 ships each. In 2006 the Caribbean MoU recorded 171 deficiencies in total and 2007 a number of 756 deficiencies. This means an average deficiency per inspection of 1.6 for 2006 and 0,9 for 2007. Compared to the earlier discussed MoUs, this number seems amazingly low.
This leaves room for two possibilities: Whether ships entering the Caribbean are in an above average shape or port state control inspections are not carried out as responsible as in other MoUs, yet.

6. Mediterranean MoU

The Memorandum of Understanding on port State control in the Mediterranean Region has been signed in 1997.[224] Every member authority is asked to achieve a survey minimum of 15 % per year. The Committee of the Mediterranean MoU is monitoring the effectiveness of port state control in the region and adjust the target rate based on made experiences and progresses.[225]
The Information centre of the Mediterranean MoU is located in Casablanca, Morocco.

7. Indian Ocean MoU

Another Memorandum of Understanding is covering the Indian Ocean region and has been signed in 1998.[226] The target rate of this MoU is 10 % annual inspections per country. The Secretariat of the Indian Ocean MoU is located in Goa, India.[227] The four leading members of this MoU are Australia (40% of inspections), Iran (17 %), India (12%) and South Africa (11%).[228] The Indian Ocean MoU also participated on several CICs especially together with the Tokyo MoU and the Paris MoU.
Also, the Indian Ocean MoU has a very similar targeting similar to that of the Paris MoU.[229] Keeping that in mind, the data of the recent years are quite interesting.

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[224] Members are: Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Tunisia, Turkey, the Palestinia Authority.
[225] ZO Özcayir (note 41) at 5.170.
[226] Members are: Australia, Bangladesh, Djibouti, Eritrea, France, India, Iran, Kenya, Maldives, Mauritius, Mozambique, Myanmar, Oman, Seychelles, South Africa, Sri Lanka, Sudan, Tanzania, Yemen.
[227] www.iomou.org visited 27.01.2010.
[228] relating to the 2008 Annual report of the Indian Ocean MOU.
[229] Section 3.3 www.iomou.org/moumain.htm visited 17.01.2010.

Year	Inspections	Deficiencies	Deficiencies per inspection	Detentions	Detentions in % of inspections
1999	2.554	6.430	2.5	190	7.4
2000	4.949	14.935	3.0	336	6.8
2001	5.520	14.644	2.7	291	5.3
2002	5.452	12.732	2.3	306	5.6
2003	5.093	13.233	2.6	472	9.3
2004	5.690	15.142	2.7	489	8.6
2005	5.205	15.006	2.9	374	7.2
2006	5.124	16.045	3.1	406	7.9
2007	4.810	15.392	3.2	453	9.4
2008	5.631	18.788	3.3	553	9.8

Even though the Indian Ocean MoU uses the same targeting system as the Pars MoU, the statistic shows, that especially the number of detentions is growing to an alarming level. In 2008 nearly every 10th ship, entering a port of a member State of the Indian Ocean MoU has been detained. Also, the data is moving right the opposite way then the statistics of the Paris MoU. This could be a sign that substandard ships moved into the Indian Ocean area, to find work after being dismissed in the other MoUs controlled areas. Also the data of the Tokyo MoU seem to confirm the presumption, that the number of sub-standard ships is about to increase in the Indian Ocean and Pacific.

This points the importance up, to carry port State control in the Indian Ocean and Pacific.

8. West and Central African MoU

The last MoU signed in the 90's has been the Abuja MoU of 1999.[230] The target rate of this MoU is 15 % per country. Anyway, there are no recordings, if this target rate

[230] Members are: Angola, Benin, Cameroon, Cape Verde, Congo, Cote d'Ivoir, Equatorial Guinea, Gabon, The Gambia, Ghana, Guinea, Liberia, Mauritania, Namibia, Nigeria, Senegal, Sierra Leone, South Arica, Togo.

has been matched until 2002. The only publications in the annual records make reference to the results of 2003 to 2008. In 2003 the inspection rate was only 2,0%. In 2004 it raised to 9,0%. At that time, astonishingly, all reported inspections have been carried out by three member states, namely Congo (27%), Nigeria (33%) and South Africa (40%).
This shows which important and significant role South Africa plays in the Abuja MoU.[231]

9. Other MoUs

Also in the new Millennium new MoUs have been concluded. To mention is the Black Sea MoU[232] signed in 2000 and the Riyadh MoU[233] signed in 2004.

As shown, the MoUs are of high importance for port State control. They coordinate the inspections, provide data concerning maritime safety, share data between member states and carry out joint ventures between the several MoUs. Only MoUs make port State control, as it is practiced today, possible. The statistics, especially of the MoUs located on the Pacific and Indian Oceans, show up, that strict inspections if vessels will be also necessary in the future, to make sub-standard ships not only to dislocate their area of business, but to make them disappear.

By ending the section about MoUs, the overview on port State control is finished.
Anyway, the IMO has introduced other regimes that have great effect on maritime safety and shall be presented in the following.

III. Other Regimes

As mentioned earlier, the IMO is dedicated to maritime safety. There are several Conventions regarding the safety ships, lives and the environment that are not directly related to port State control, but of course have an important impact on maritime safety

[231] HS Bang (note 30) at 741
[232] Members are: Bulgaria, Georgia, Romania, Russian Federation, Turkey, Ukraine.
[233] Members are: United Arab Emirates, Kingdom of Bahrain, Kingdom of Saudi Arabia, Sultanate of Oman, Qatar, Kuwait.

1. Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs)

The 1972 COLREGs replaced the version from 1960 and came into force on 15th July 1977. COLREGs deals in detail with rules aiming to prevent collisions.[234] For example, Art. 5 of the Convention states that "every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision." These regulations continue as COLREGs gives recommendations for every dangerous situation between two ships on sea. It also deals with light and sound signals. Therefore, also COLREGs is an important contribution to maritime safety.

2. International Convention on Maritime Search and Rescue, 1979 (SAR)

The 1979 SAR entered into force on 22nd June 1985. SAR aims to be an international regime, covering search and rescue operations. Even though, this assistance already took place in practice on basis of tradition, there was no international regime covering rescue operations for ships in distress.

SAR divides the oceans into 13 rescue areas, of which the States situated in are responsible. Also, SAR encourages neighbouring States to introduce SAR agreements and assist each other in emergency cases in their territorial waters. It subscribes rescue procedures and demands the development of rescue coordination centres and subcentres. Sadly, the Convention has not been accepted very well.[235]

3. Convention on the International Maritime Satellite Organization, 1976

The Convention on the International Satellite Organization came into force on 16th July 1979. After the IMO explored the necessity of a satellite based safety system (INMARSAT), the IMO created two entities:

- Inmarsat Ltd.: A private run company, being the commercial arm of the program.
- International Mobile Satellite Organization (IMSO): The IMSO is an international governmental body with 87 members. It is based in London. The IMSO's duty is to take care, that the Inmarsat Ltd. keeps providing the Global Maritime Distress and Safety System (GMDSS). Ships, sailing in specified sea

[234] www.IMO.org visited 27.01.2010
[235] ibid.

areas, are obliged to carry Inmarsat distress equipment, to be able to communicate in cases of distress and coordinate rescue operations.[236]

It shows that the IMO has created another strong body to ensure maritime safety with modern equipment.

4. further regimes

As described before, the IMO created maritime safety regimes covering nearly all areas of international shipping. Further Conventions related to maritime safety are the **International Convention for Safe Containers, 1972 (CSC),** the **Torremolinos International Convention for the Safety of Fishing Vessels, 1977** and the **Special Trade Passenger Ship Agreement 1971.**

Also regarding the fight against terrorism, the IMO created Conventions and Codes, ensuring maritime safety. To mention is the **Convention for the Supression of Unlawful Acts Against the Safety of Maritime Navigation, 1988** and the related **ISPS Code[237].**

Also regarding civil liability for ship owners, the IMO created Conventions.[238] These Conventions do have indirect affects on maritime safety. Putting more liability on ship owners regarding pollution and loss of life, ship owners do have a strong interest in increasing the standard of their vessels.

D) Conclusion

It has been shown that several measurements against substandard ships have been achieved. The port states organised themselves and coordinated with each other in the way that substandard ships are listed internationally, inspected and hopefully banned from the seas. Because of the regulations of the IMO and the ILO, that set the standards of port State control, and also due several Memoranda of Understanding, which form the 'umbrella of coordination' for port State control, improvements in safety of ships and protection of the environment could be achieved.

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[236] ibid.

[237] The 2004 International Ship and Port Facility Security Code (ISPS) gives PSCOs wide ranged rights and is therefore part of port State control. Because it is a matter of port and ship security against terrorism, it shall not be subject of this work.

[238] e.g. the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001.

It also has been shown, that maritime safety is not only an element of good ships but basically has three elements: Firstly, the condition of a ship itself, secondly the competence of the crew and thirdly consciousness towards the environment. Even though, the environmental protection might not have a direct effect on ship safety, it is important for the tattered reputation of international shipping. Therefore, it is the logical consequence that port State control also focuses on the avoidance of pollution caused by ships. As shown, the international Conventions provide a legal background for nearly every possible cause of risk regarding shipping. The existing Conventions have been regularly been modernised by amendments to make them keep pace with the changing standards, new ship types and altering peripheral circumstances.

It also has been presented, how port State control works in practice. The variety of certificates, which have to be provided and the fields of possible deficiencies the PSCO have to put attention on.

It also has been shown, how closely Memoranda of Understandings and regime giving bodies as the IMO work together. Whenever the IMO updated one of its Conventions, especially the Paris MoU reacted with several guidelines for their Port State Control Officers on which factors to concentrate. Of course not only the Paris MoU, but nearly all MoUs are using such guidelines, even though the Paris MoU has taken a leading role regarding the implementation of new Conventions or change of already existing ones.

Also, this work examined possibilities to force flag States to fulfil their duty to inspect the vessels in their registers properly. Sadly, the United Nations Convention on Conditions for Registration of Ships is not likely to come into force. Therefore, the burden to raise international standards in shipping will stay with the port States in the future.

But port State control also seems to have a counter side. As the statistics showed, it seems like sub-standard ships move into the Pacific and Indian Ocean Area, which makes it even more important, to built up and maintain efficient port State control authorities.

Even though, the situation of ship standard improved during the 1990's mainly thanks to the invention of port state control, the recession since the year 2008 could have adverse effects on ship safety, as the statistics in the MoU section proved. This has been recognised by institutions like Classification Societies as well as MoU

committees. For example, the Det Norske Veritas (DNV) director Bjorn Tore Markussen stated at the Singapore Maritime Week that "in today's adverse market situation, we see that the shipping executive's agenda is shifting from growth and capability building, to various cost cutting initiatives. This shift will be even more challenging when we now see that more shipping companies struggle to survive the financial crisis." To underline this statement he said that DNV knows "from research, cost-cutting exercises without proper risk management and consequence analysis towards safe and secure operations might result in companies saving dimes while losing bucks."[239]

Also Committees of MoU's are worried about ship safety. In the 2008 annual report of the Paris MoU it is stated that "With the global economic recession gaining momentum at the end of 2008 the prospects for 2009 are worrying. Commercial shipping operators, as in other industries, are seeking to reduce costs. If wrong choices are made this could have impact on the safety of shipping. There is some concern that a relaxation in the regulatory regime by some flag States and some recognised organizations could have negative impact on shipping."[240] Also a poll of Lloyd's List came to the result that 71 % of its readers believe, "that the global economic downturn [will] mean a global shipping safety downturn as well."[241]

Also the delegates of the 'Sea Asia 2009' stated that it will get much worse before it becomes better again. The delegates have been ship owners, industry trade groups, government trade groups, port authorities and industry support groups.[242]

To avoid that the improvements of the last years will be disrupted, strong provisions are to be taken. The Paris MoU for example established a black and grey list. On this lists flags of convenience that certify sub-standard ships are recorded. Ships flying this flags will be no longer welcome in ports of the Paris MoU member States from 2011.[243] Also Classification Societies raise the pressure on owners of sub-standard ships. Therefore, even though the recession is a new threat for maritime safety, it

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[239] http://www.dnv.com/news_events/news/2009/dnvcallsforimpovedsafetyperformanceinshipping.asp.htm# visited: 02.09.2009.

[240] http://www.parismou.org/upload/anrep/VerkWatstaat_BW%20LR1.pdf visited 01.09.2009.

[241] http://www.lloydslist.com/ll/news/will-safety-be-upheld/1237080487456.htm?highlight=true&containingAll=maritime+safety+recession&containingPhrase=&containingAnyWords visited 01.09.2009.

[242] http://seekingalpha.com/article/131972-global-shipping-industry-sees-long-duration-economic-recession visited 25.01.2010

[243] http://www.parismou.org/upload/anrep/VerkWatstaat_BW%20LR1.pdf visited 01.09.2009.

could be said that constantly growing numbers of port State control provisions and MoUs will in the end succeed to improve the situation on the seas.

An example is SOLAS 74. On 1st October of 2010 a new Amendment of SOLAS 74 will come into force. This amendment defers from former amendments in an important way. It applies to all ships, not only ships being built after coming into force of the amendment. This could mean that it will be too expensive to bring older vessels to standards of new ships. In this case the quite old world fleet of merchant ships could grow younger. This implies advantages for ship safety and environmental protection. Still, the recession could be a threat for this long term achievements. But, as prognosticated above, constant improvement of port State control will help in the medium and long term to further improve the situation of maritime safety and ban so called 'rustbuckets'[244] from the sea.

[244] see http://www.parismou.org/ParisMOU/Caught+in+the+Net/xp/menu.4268/default.aspx for the "rustbucket of the month" catched by a Paris MoU port State authority.