International and national regulation of operational and accidental cruise ships pollution of the marine environment in the Arctic

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List of Acronyms and Abbreviations

AECO	Association of Arctic Expedition Cruise Operators
AEPS	Arctic Environmental Protection Strategy
AHDR	Arctic Human Development Report
AMAP	Arctic Monitoring and Assessment Programme
AMSA	Arctic Marine Shipping Assessment
ATCM	Antarctic Treaty Consultative Meeting
ATS	Antarctic Treaty System
CDEM	Construction, Design, Equipment and Manning
CLIA	Cruise Liners International Association
EEZ	Exclusive Economic Zone
GAIRAS	Generally Accepted International Rules and Standards
IAATO	International Association of Antarctica Tour Operators
IACS	International Association of Classification Societies
ICJ	International Court of Justice
IMO	International Maritime Organization
LOSC/UNCLOS	1982 UN Convention on the Law of the Sea
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships, London, 2 November 1973, as modified by the 1978 Protocol and the 1997 Protocol and as regularly amended
MOU	Memorandum of Understanding on Port State Control
NCA	Norwegian Coastal Administration
NEP	Northeast Passage
NSR	Northern Sea Route
NWP	Northwest Passage
SOLAS	International Convention for the Safety of Life at Sea, 1974
SRS	Ship Reporting Systems
VTS	Vessel Traffic Services
WWF	World Wide Fund

1 Introduction

1.1 Background

Navigation in the Arctic has always been a unique activity compared to the other marine regions of the world. The main explanations of that are the remoteness of the area, which produces certain risks in terms of timely response to accidents which may occur, and severe climatic conditions, primarily, the coldness and the presence of ice throughout the most part of the year. All this requires special technical skills of the crew and creates serious threats to the safety of ships navigation in this marine area. As a result, the vessels are exposed to cause negative effects to the environment.

There are several categories of the Arctic shipping such as, for example, the commercial vessels and oil tankers; however especially the cruise-based tourism in this area has shown the rapid growth in the last few decades.

Going back to history, "tourists began visiting the Arctic in the early 1800s and their attraction to this unlikely destination has grown steadily for more than two centuries… In 1850, Arctic marine tourism by commercial steamship was initiated in Norway… Arctic destinations included Norway's fjords and North Cape, transits to Spitsbergen, Alaska's Glacier Bay… riverboat cruises in the Canadian Yukon, and cruises to Greenland, Baffin Bay and Iceland."[1]

Cruise vessels navigation for tourism and recreation is very challenging ship operation process. There are various reasons to explain that. Above all, the peculiarity of the cruise industry is that it generally operates large vessels that carry on board a considerable number of passengers. Consequently, cruise ships generate a substantial amount of waste.[2] The operational discharge is a normal activity for all the vessels navigating in any marine region of the world. However, the marine pollution from accidents is more likely to happen in the Arctic than in the other parts of the world's ocean.

The Arctic is the Polar region, which is distinct for its geographical, climatic and ecological characteristics. Moreover, the Arctic has been inhabited for many centuries and the coastal territories where the indigenous peoples live are under greater threat because of the increasing marine pollution. Therefore, emphasizing the increasing touristic interest to the Arctic nowadays and prospectively in the future and as a consequence growing amount

[1] AMSA 2009 Report. p.45. Arctic council, April 2009, second printing (http://www.pame.is/images/stories/PDF_Files/AMSA_2009_Report_2nd_print.pdf). Viewed on 01.06.2012.

[2] Mohammed, Torres, and Obenshain (1998) p. 1.

of cruise vessels in this region, the importance of protection of this fragile marine environment comes to the forefront.

There is a number of general international mandatory legal instruments pertinent to the protection of the Arctic marine environment. Besides, there are specific regulations relevant to the cruise vessels that mainly bear non-legally binding character and are focused on individual States and subjects, which do not cover the entire Arctic as a complete system. In order to address challenging issues within international legislation in relation to the cruise ship pollution in the Arctic, this work will analyse the relevant provisions which reveal the possibilities of the coastal States to regulate cruise ship traffic in the Arctic. The most important of these treaties[3] are to be discussed in the scope delimitation and outline subsection.

One of the most popular destinations in the Arctic is Spitsbergen or Svalbard. Its unique nature attracts visitors from all over the world to take cruise liners to travel there. The increasing number of the cruise vessels navigating in the Norwegian Arctic waters affects the marine environment. Being under the full sovereignty and jurisdiction of Norway[4] the protection of the marine environment in Svalbard maritime zones lies on the Norwegian authorities. Hence, apart from the international legislation the national legislation pertaining to the cruise vessels in the Svalbard waters as an example of the coastal State response to the environmental threats in the Arctic will be analysed in the thesis.

The Antarctic is another Polar region where the ship-based tourism has also grown considerably. The regulation of the vessels' navigation in this region is being managed by the unified Antarctic Treaty System, which is why the experience of the Antarctic legislation is an interesting subject to compare with the Arctic to outline the differences and similarities that can be of a special value with regards to the potential improvements of the legislation applicable to the Arctic.

[3] The 1969 Vienna Convention on the Law of Treaties, Art 2 (1) (a) defines a treaty as: an international agreement concluded between States in written form and governed by international law, whether embodied in a single instrument or in two and more related instruments and whatever its particular designation.

[4] The 1920 Spitsbergen Treaty, Art. 1.

1.2 Objectives

The research is aimed at the study which possibilities the coastal State has in regulation of operational and accidental pollution to the marine environment from the cruise vessels navigating in the Arctic on the example of international legislation. Consequently, the relevant Norwegian national legislation applicable to Svalbard Arctic maritime zones concerning the aforementioned major topic is examined in the thesis. Together with that, a comparative analysis of the Arctic and Antarctic legal regimes related to the regulation of the marine pollution from the cruise vessels is made.

Based on this assumption the research questions are formulated as the following:

- What legal possibilities does the coastal State have according to the major international regulations aimed at preventing the operational discharge and accidental cruise vessel pollution in the Arctic?
- How has Norway implemented its national legislation to prevent the negative environmental impacts from the operational and accidental pollution from the cruise vessels in Svalbard maritime zones?
- How can the experience of the Antarctic Treaty System be beneficial for the prospective legal regime on the environmental protection from cruise vessel pollution in the Arctic?

1.3 Scope delimitation and outline

The thesis will analyse the relevant provisions of the two main international treaties i.e., the 1982 United Nations Convention on the Law of the Sea and the MARPOL 73/78. For the purpose of the thesis, the other major international legal sources will not be regarded in order to keep within the outlined scope frames. Further on, the focus will be set on several specific regulations related to the cruise vessels in the Arctic such as the IMO Polar Shipping Guidelines and the Arctic Expedition Cruise Operators Guidelines (AECO Guidelines).

Together with that the legal regimes of the Arctic and Antarctic will be compared, based on the 1959 Antarctic Treaty and the 1991 Environmental Protocol.

Particular attention will be paid to the Norwegian legislation pertaining to Svalbard, especially the Svalbard Environmental Protection Act and Heavy Fuel Oil ban on board ships in Svalbard's Eastern waters regulations.

The two types of pollution regarded in the thesis are the following: the operational discharge and the pollution arising from accidents. Due to the limited wordage of the work, the main kinds of operational pollution and the impacts to the environment caused by them will be regarded briefly, whereas the investigation will be primarily focused on the analysis of the aforementioned relevant international regulations aimed at the prevention of such pollution applicable to the cruise vessels.

With regards to the structure, the thesis will comprise the following elements:

In the introduction the objectives of the research will be outlined, its scope delimitation, the legal sources and methods used during the investigation process will be provided.

Then, in the second part of the thesis the context of the research is going to be set up: an overview of the current and perspective cruise vessels navigation in the Arctic will be given, emphasizing the growth of the cruise industry together with the spatial definition of the region, the terms what the operational and accidental discharges are, their types and components and environmental problems which they cause will be explained.

Further on, in the third part of the thesis the research questions will be analysed correspondingly. The first chapter will be devoted to the study of the international legislation related to the measures which the coastal State can take to deal with the accidental and operational pollution from the cruise-vessels in the Arctic and analysis how adequate these regulations are to prevent the negative impacts of such pollution on the Arctic marine environment.

In the second part, the national measures that Norway implements to prevent the aforementioned sorts of pollution from the cruise vessels in order to protect Svalbard marine environment will be examined.

In the third part, the Arctic and Antarctic regulations related to the operational and accidental pollution from cruise-vessel navigation to the marine environment will be compared and analysed.

In the end, the conclusions will be made in accordance with the results achieved from the analysis of the stated research questions.

1.4 Legal sources and methods

In order to achieve the objectives of the thesis, the following methodological approach has been used.

Primarily, the main method used for the purpose of the thesis is the analysis of international and national legal sources, as stipulated by the Article 38 of the Statute of the International Court of Justice (ICJ). Together with that, the method of interpretation of the treaties set by the Article 31 of the Vienna Convention on the Law of Treaties[5] is used. The two main treaties used for the purpose of the thesis were the provisions of the 1982 UNCLOS and the IMO MARPOL 73/78 Convention. As a general rule of the international law the treaties are only mandatory for the States that are parties to them, which means that the other States are not bound by those obligations. Nevertheless, the treaties' provisions may be internationally legally binding on States following the customary international law and State practice.[6]

Then, the 'soft law' instruments are also of relevance for the questions of the thesis, as the importance of the non-legally binding norms is increasing especially in the regulation of the environmental protection issues[7]. The main relevant 'soft law' instruments are the Guidelines and Regulations of the IMO.

Specific attention is also paid to relevant Norwegian national legislation, i.e. the Svalbard Environmental Protection Act and Heavy Fuel Oil ban on board ships in Svalbard's Eastern waters regulations.

Furthermore, the critical analysis of the additional scientific reports, books, articles and political documents as defined by the Article 38 of the ICJ have been used to support the legal argumentation and provide the complete discernment of the researched topic.

[5] The 1969 Vienna Convention on the Law of Treaties, Art.31.
[6] The Statute of the International Court of Justice, Art.38, para 1(b).
[7] Abbot and Snidal (2000).

2 Cruise vessels navigation in the Arctic: environmental outcomes

2.1 Introduction

This part of the thesis will be focused on the cruise liners navigation in the Arctic region and its influence on the Polar environment. First of all, the definition and the spatial scope of the marine Arctic which will be regarded in the work will be presented. Then the navigational activity of the cruise ships in this area will be outlined in order to have an overview of the vessels traffic density. Further on, a general definition of the marine pollution with particular focus on its operational and accidental forms will be given, and finally a brief examination of the main types of the aforementioned pollution produced by cruise vessels and the problems caused by these sorts of pollution on the marine environment will be done. The possible legal solutions to them on the international level will be subject of the analysis in the following chapter.

2.2 The Arctic – setting the scene

Nowadays there is no single generally accepted definition of the marine Arctic in the world. There exist several geographical, ecological and other criteria for the explanation of the term – Arctic. For the scope of the thesis two main characterizations of this Polar region will be provided. Most commonly, the delineation of the Arctic boundaries is done by the Arctic Circle, which is the invisible line of latitude 66°33' North[8]. Alternatively, provided by the Arctic Human Development Report (AHDR) and stipulated by the political reasons, the Arctic includes "[a]ll of Alaska, Canada North of 60°N together with northern Quebec and Labrador, all of Greenland, the Faroe Islands, and Iceland, and the northernmost counties of Norway, Sweden and Finland… in Russia … encompasses the Murmansk Oblast, the Nenets, Yamalo-Nenets, Taimyr, and Chukotka autonomus okrugs, Vorkuta City in the Komi Republic, Norilsk and Igarka in Krasnoyarsky Kray, and those parts of the Sakha Republic whose boundaries lie closest to the Arctic Circle."[9] This definition is much broader than the first one and incorporates also

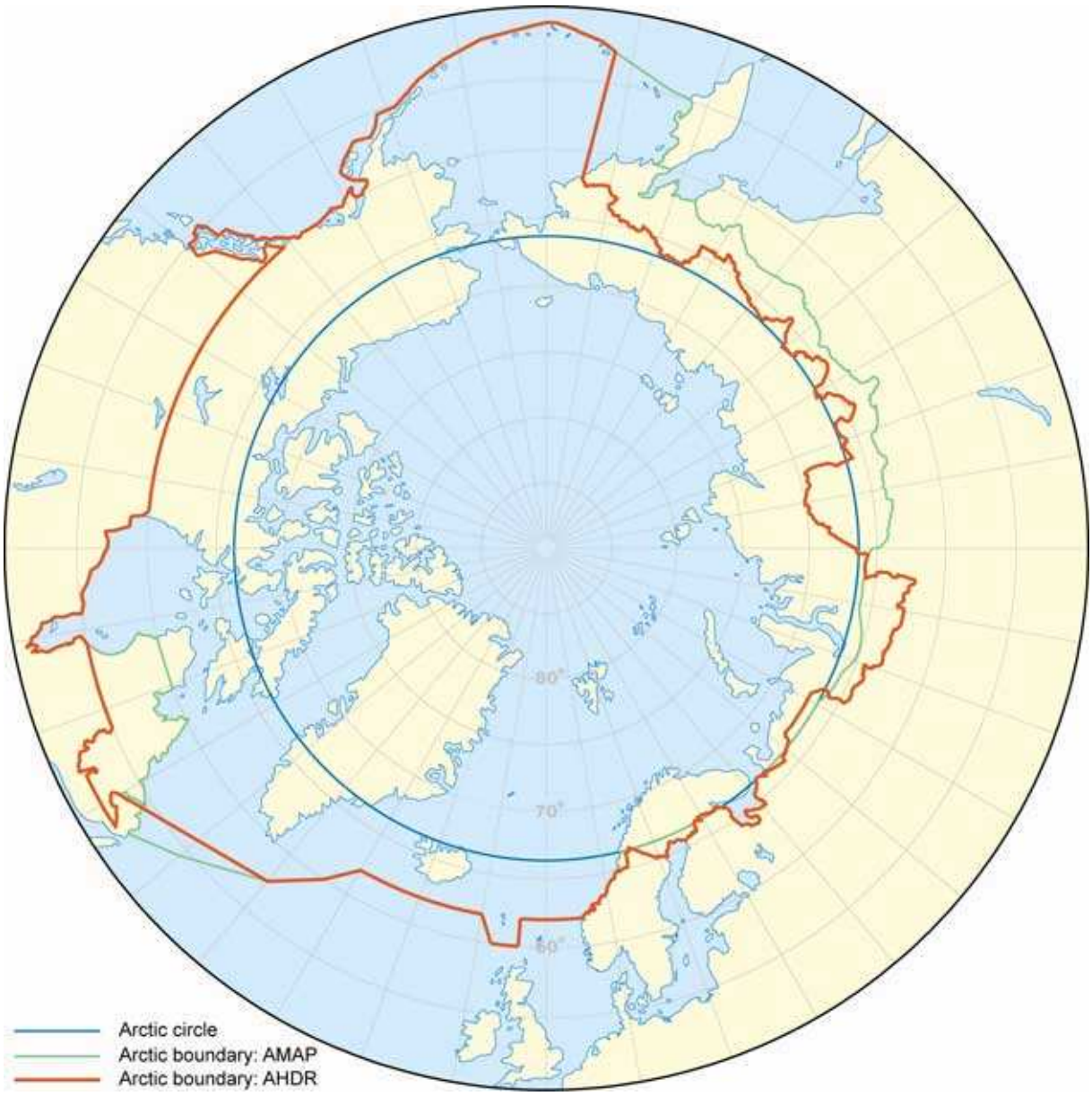
[8] Rayfuse (2007) p.197.

[9] Arctic Human Development Report, 2004, p.17-18. (http://www.svs.is/AHDR/AHDR%20chapters/English%20version/Chapters%20PDF.htm). Viewed on 25.05.2012.

the sub-Arctic territories of the eight Arctic countries, i.e. Canada, Russia, Norway, Sweden, Iceland, Finland, Denmark and the United States.

Both aforementioned delimitation lines can be seen on the Figure 1, which also includes the boundary established by the Arctic Monitoring and Assessment Programme (AMAP).

Figure 1. The delineation of the Arctic[10]



"There is no universally accepted definition for the "Arctic Ocean" either. However, it seems generally accepted that there are only five coastal States to the Arctic

[10] Arctic boundaries. Compiled by Winfried K. Dallmann. (http://www.arctic-council.org/images/maps/boundaries.pdf). Viewed on 09.06.2012.

Ocean, namely Canada, Denmark (in relation to Greenland), Norway, the Russian Federation and the United States."[11]

Referring to the Koivurova and Molenaar, "[t]he Arctic Ocean holds considerable strategic interest for the arctic states, arctic residents and the international community as a whole. The arctic marine environment is one of the world's largest, most valuable and pristine natural regions. The area is facing unprecedented changes with melting sea ice and is under threat from increased economic activities such as shipping, oil and gas development, tourism and fishing. The new sea emerging right before our eyes from beneath the sea ice is in urgent need of regulation and protection."[12]

The increase of the number of the tourist cruise liners heading to the Arctic proves the necessity to review the current legal framework in order to introduce and provide the measures, which will be able to adequately protect the Arctic marine environment from the emerging pollution threats.

2.3 Current and prospective cruise vessels navigation in the Arctic

The navigation of the cruise ships in the Arctic is dependent mostly on three main characteristics: the availability of the sea-routes leading to the cruise destination points, the vessels themselves, which are capable to operate in the Arctic waters, and the level of the ice-coverage of the area.

What is the definition of a cruise ship? According to AMSA report, cruise vessels are passenger vessels that "carry passengers, whether for transport purposes only or where the voyage itself and the ship's amenities are part of the experience."[13] And a passenger ship is "usually defined as a ship carrying more than 12 passengers."[14]

When the cruise tourism in the Arctic was in its inception, which dates back to the beginning of the XIXth century[15] there were just a few ships, which carried on average around 100 passengers[16]. "At the present time, advanced ship technologies together with improved marine charts and navigational aids have allowed cruise ship travel to increase

[11] Koivurova, Molenaar (2009) p. 15-16.
[12] Ibid p.3.
[13] AMSA 2009 Report. p.72. Arctic council, April 2009, second printing. http://www.pame.is/images/stories/PDF_Files/AMSA_2009_Report_2nd_print.pdf. Viewed on 01.06.2012.
[14] The International Maritime Organization. Passenger ships. http://www.imo.org/ourwork/safety/regulations/pages/passengerships.aspx. Viewed on 27.05.2012.
[15] Snyder (2007) p.12.
[16] Klein in Lèuck (2010) p.57.

exponentially."[17] And the modern cruise liners are able to accommodate 3000 or more people on board.

The density of cruise vessels traffic in the Arctic nowadays is concentrated on certain areas stipulated by the touristic interests and demands as well as the cruise vessels capability to reach those locations. According to the report from the world's largest cruise agency – Cruise Liners International Association (CLIA) in 2009, Alaska was the third destination point for the members of CLIA.[18]

"Large cruise ships have … increased their presence in the northern hemisphere. Cruise tourism in Alaska has grown to almost 1 million passengers per year. There has also been significant growth in cruise ship visits to Iceland, Greenland, the coasts of Norway, Sweden and Finland, and the cost of Labrador."[19] Cruise traffic around Svalbard has increased as well what will be discussed further on in the thesis.

There are three main Arctic cruise vessels traffic routes: the Northeast Passage (NEP), which is lying along the coast of the Russian Federation and connects the Atlantic and Pacific Oceans, the Northwest Passage (NWP), which represents the coastal sea lane between the Atlantic and Pacific Oceans spanning the straits along the coast of the archipelago of Canada, and the Trans Polar Passage that is presumed to be a mid-ocean route across the North Pole.[20] (Figure 2)

"From a navigational point of view, the NWP will be the last area where the multiyear ice will disappear and shipping through this Passage will remain risky even in the summer season. The ice models indicate that the ice conditions will be too heavy for any commercial shipping."[21] However, "between 1984 and 2004, 23 commercial cruise ships accomplished transits of the Northwest Passage."[22] It is considered that "currently, the NEP seems to offer the best operating conditions for commercial shipping activities during summer season."[23]

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[17] Snyder (2007) p.12.

[18] The overview. 2010 CLIA Cruise Market Overview. Statistical Cruise Industry Data Through 2009. http://www2.cruising.org/press/overview2010/. Viewed on 12.06.2012.

[19] Klein in Lèuck (2010) p.58.

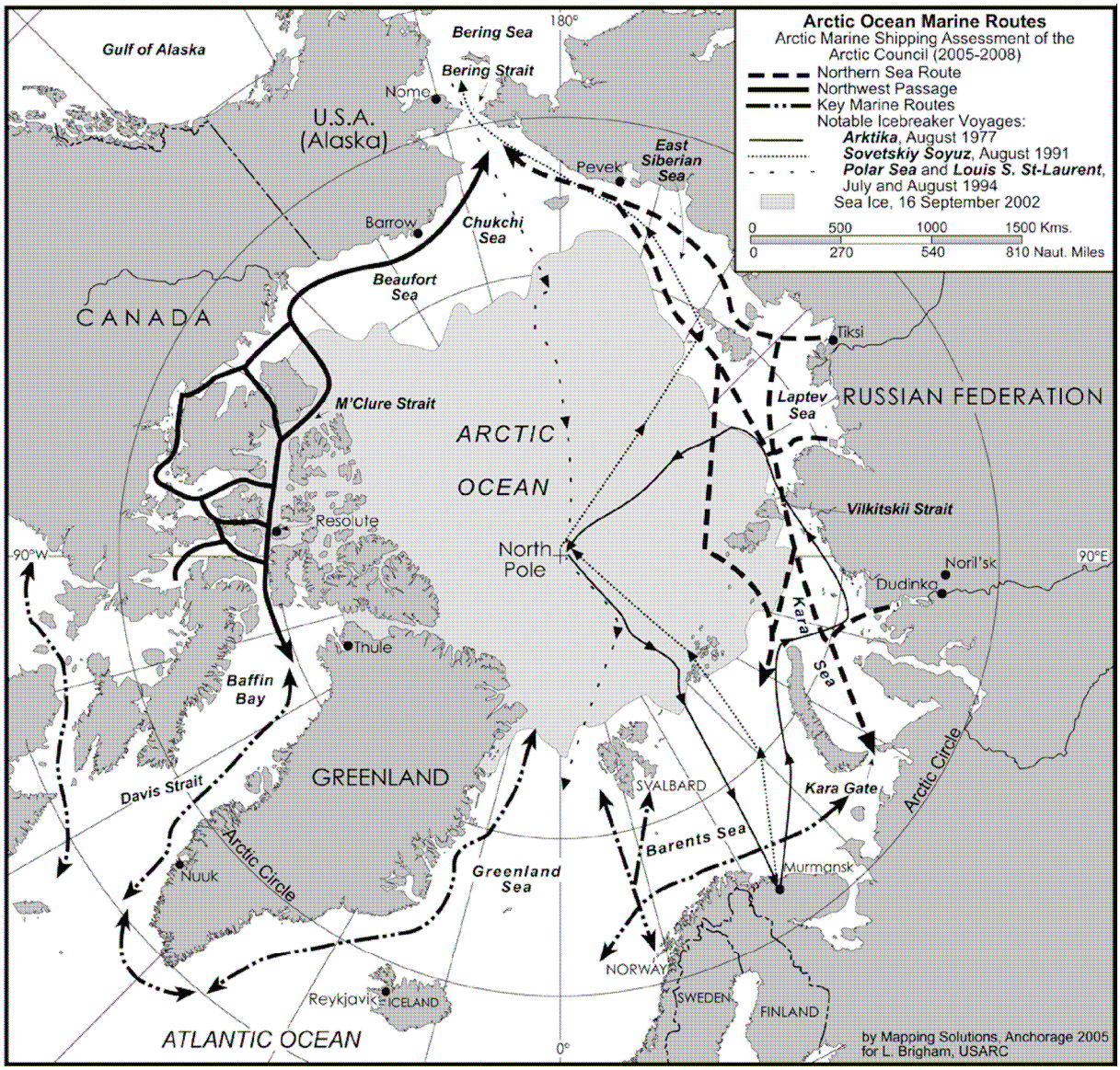
[20] Marine Traffic in the Arctic. A report Commissioned by the Norwegian Mapping Authority http://www.iho.int/mtg_docs/rhc/ArHC/ArHC2/ARHC2-04C_Marine_Traffic_in_the_Arctic_2011.pdf. 2011. Viewed on 20.06.2012.

[21] Ibid p.19. Viewed on 20.06.2012.

[22] AMSA 2009 Report. p.79. Arctic council, April 2009, second printing (http://www.pame.is/images/stories/PDF_Files/AMSA_2009_Report_2nd_print.pdf). Viewed on 01.06.2012.

[23] Marine Traffic in the Arctic. A report Commissioned by the Norwegian Mapping Authority http://www.iho.int/mtg_docs/rhc/ArHC/ArHC2/ARHC2-04C_Marine_Traffic_in_the_Arctic_2011.pdf. 2011. p.5. Viewed on 20.06.2012.

Figure 2. The Arctic Ocean with Transportation corridors[24]



Concerning the mid-ocean route, "in 2004, the only passenger vessels that traveled in ice-covered waters were the Russian nuclear icebreakers that took tourists to the North Pole, voyages they have been making for tourism purposes since 1990."[25]

The present reliable data of the exact number of the cruise liners navigating in the Arctic is hard to obtain due to the lack of unified monitoring system, however the total

[24] Mapping solutions, Lawson Brigham, USARC Anchorage 2006. Marine Traffic in the Arctic. A report Commissioned by the Norwegian Mapping Authority http://www.iho.int/mtg_docs/rhc/ArHC/ArHC2/ARHC2-04C_Marine_Traffic_in_the_Arctic_2011.pdf . 2011, p.4. Viewed on 20.06.2012.

[25] AMSA 2009 Report. p.78. Arctic council, April 2009, second printing. http://www.pame.is/images/stories/PDF_Files/AMSA_2009_Report_2nd_print.pdf. Viewed on 01.06.2012.

estimated number of ship-based passengers visiting different destinations in the Arctic region counts up to several million people[26].

The prospective navigation in the Arctic is stipulated not only by the economic development but mainly by the climatic changes. Nowadays this area is covered by ice most part of the year, which means more than six months. Thus, the majority of the cruise vessel voyages in the Arctic takes place during the summer season in ice-free waters.

"The summer season has traditionally been defined as June-October, but favorable ice conditions and technological improvements have gradually allowed an extended summer season. Navigation during the winter season (November-May) is generally much more difficult than in the summer season, due to the thicker ice cover."[27]

"With powerful icebreakers one can reach the North Pole or circumnavigate the entire Arctic Ocean. With expedition ships and ice classed passenger/cruise vessels, trips are offered into the NWP and in the NSR trips go to Novaja Zemlja and Franz Josef's Land in the west and to the Wrangle Island in the Chukchi Sea in the east. The vessels are fairly small – 50 to 400 passengers – very small compared to the largest cruise vessels of more than 5000 passengers. The larger vessels concentrate on the blue waters around Svalbard and Greenland, which is the target for most Arctic cruises, while the smaller vessels go on expeditions in ice-covered waters."[28]

As Rayfuse and Borgerson noted, the melting of the ice would allow tour operators to offer cruises in all three aforementioned sea routes, which would increase the amount of vessels to use the Arctic Ocean areas that had a limited access in the past. Higher density of cruise ships' traffic will inevitably affect the Polar nature and raise the level of pollution. Further on, the types of pollution produced by the cruise vessels will be presented.

[26] Lèuck (2010).

[27] Marine Traffic in the Arctic. A report Commissioned by the Norwegian Mapping Authority http://www.iho.int/mtg_docs/rhc/ArHC/ArHC2/ARHC2-04C_Marine_Traffic_in_the_Arctic_2011.pdf. 2011. p.12. Viewed on 20.06.2012.

[28] Ibid p.19. Viewed on 20.06.2012.

2.4 Ship-based pollution from Polar cruises

The term pollution of the marine environment, according to the Article 1 (4) of the LOSC "means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities"[29].

With the development of the cruise vessel tourism in the Arctic the number of challenges related to the pollution is increasing and brings serious damages to the marine environment. The changes in the world's climate, particularly the global warming, explicitly are proving that the melting of the ice in the Arctic is the reality of our times and with every next year it becomes inevitable to face the new challenges connected to this process.[30] Arctic ice cap has reduced to half size within the past fifty years[31] and this is progressing.

Pollution from the cruise vessels as well as from the other ships generally consists of two types: operational and accidental. "Accidental discharges (oil spills) occur when vessels collide or come in distress at sea (engine breakdown, fire, explosion) and break open, or run aground close to the shore, or when there is a blowout of an offshore oil well, or when a pipeline breaks."[32] The cruise vessels sailing in the Arctic are entitled to be constructed the way which provides the protection against such damages. Nevertheless, the accidents are still likely to occur and bring adverse effects on the marine environment. "While it is uncommon for ships to sink, groundings are more common."[33] Pollution from accidents is more dangerous but does not have the same regular manner as the operational and takes its origins from maritime casualties.

In case of groundings or if the cruise ship sinks in such remote location as the Arctic, the potential damage to the environment can be tremendous especially because of the oil leakage and discharge of other dangerous waste, which are produced and located on

[29] The 1982 UNCLOS Art. 1.
[30] Rayfuse (2007).
[31] Borgerson (2008).
[32] Global Marine Oil Pollution Information Gateway. http://oils.gpa.unep.org/facts/oilspills.htm. Viewed on 07.06.2012.
[33] Lèuck (2010) p.58.

board during the voyage. The latest statistics proves to show that the accidents in the Arctic are not uncommon (Figure 3).

Figure 3. Cruise ship accidents in the Arctic waters, 2010-2008.[34]

Date	Vessel	Incident	Location
August 27, 2010	The MV Clipper Adventurer	Grounding	Near Kugluktuk in the Canadian Arctic circle
June 30, 2010	MV Polar Star	Grounding	Hornsund Svalbard in the Arctic
6 January, 2009	Richard With	Grounding	Norway
July 7, 2008	Spirit Of Glacier Bay	Grounding	Alaska
June 04, 2008	Spirit Of Alaska	Grounding	Alaska

Because of the large sizes and great number of passengers on board, the cruise liners produce greater amount of waste than other ships. The operational discharge is normally a deliberate and routine activity that can to a very large extent be effectively controlled and avoided depending on the construction and technical facilities provided on the vessel and the relevant knowledge and attitudes of the vessel operator and the crew.[35]

First of all, the cruise ships produce large amounts of wastewater of two main kinds: grey water and black water. Grey water comes from sinks, showers and related activities and represents the largest category of liquid waste from cruise ships, e.g. up to 800,000 litres of grey water is produced on average cruise liner comprising 2000/3000 passengers plus crew per day.[36]

Black water or, more commonly, sewage consists of wastewater generated from toilets and medical facilities and estimates 114,000 litres daily.[37] If the untreated black water is discharged into the sea, it can inevitably cause serious threats to the marine environment, the mortality of fish and benthic organisms.[38]

[34] Cruise ship sinking. Cruise Ship Grounding Listing Tilting Cruise Ship Accidents - Cruise Ship Collisions. http://www.cruiseshipsinking.com/. Viewed on 16.06.2012.
Maritime Accident casebook. Richard With Ferry Grounding Report Out. http://maritimeaccident.org/2010/04/richard-with-ferry-grounding-report-out/. Viewed on 17.06.2012.
[35] Global Marine Oil Pollution Information Gateway. http://oils.gpa.unep.org/facts/oilspills.htm. Viewed on 07.06.2012.
[36] Lèuck (2010) p.111.
[37] Ibid.
[38] Coghlan (2007) p.65.

The other type of waste is hazardous, e.g. dry-cleaning waste, paint, light bulbs, batteries, expired pharmaceuticals, etc.[39] "These wastes are toxic and can have significant negative impacts upon the marine environment, such as death or failure in the reproductive success of fish, shellfish, marine mammals and other living organisms."[40]

"A cruise ship produces large amounts of non-toxic solid wastes, including glass, plastic, wood, cardboard, food waste, cans and others. Much of the solid waste is being discharged at sea, which has the potential to affect the marine environment in various ways: mammals and birds can swallow the waste, which results in damage of the animal's digestive tract and, subsequently, death through starvation."[41]

"As a part of the normal operation, a cruise ship produces approximately 95, 000 litres of water that collects in the bilge (the lowest part of the ship's hull) during a one-week voyage. Also a part of normal operation is the leaking of oil from machinery and engine into the bilge water."[42] Oily bilge water can be lethal for fish, birds and mammals, and can damage coral reefs and other living organisms[43].

Another problem is that the large quantity of ballast water used by these cruise vessels in one area is being discharged in the other locations, e.g. "70,000 litres per day, with the subsequent risk of introducing invasive species into different ecosystems and giving rise to red tides and pathogens."[44] Thus, it can cause serious environmental problems.

To sum up, total amount of waste produced on a cruise ship with 2000-3000 passengers can be 1,000 tonnes per day.[45]

These figures invoke a high environmental concern in the Arctic waters as the amount of waste discharged depends on the number and sizes of the cruise ships. Taking into consideration the vulnerability of the Arctic marine area it is important and at the same time challenging task to provide the adequate response to these problems.

[39] Lèuck (2010) p.112.
[40] Sweeting and Wayne (2006) in Lèuck p.112.
[41] Lèuck (2010) p.112.
[42] Ibid p.113.
[43] Ibid.
[44] Carlton (1999) p.431.
[45] Lèuck (2011).

2.5 Conclusion

The cruise ship navigation in the Arctic region is growing steadily and the development of the modern high technologies together with the climatic changes, i.e. fast melting of ice, which in its turn widens the availability of the sea passages, are highly contributing to the intensification of the cruise activity in the foreseeable future. The increase of the large cruise liners in the waters of the Arctic brings in the problematic upsurge of the pollution produced by them. That can lead to the contamination of the greater marine areas.

Therefore, the main goal of the international and national regulations is to provide measures to prevent marine pollution to the best possible extent and to eliminate the adverse effects of it to the sea-environment. Regarding severe climatic conditions, remoteness and the lack of relevant infrastructure in the Arctic, the necessity to develop legislation capable to provide adequate response to the emergencies at sea and moreover to increase the level of compliance with it becomes of a special importance.

Hence, taking into consideration the potential threats to the marine Arctic environment in the nearest future, the current legislation should focus on the prevention of the pollution and work towards the challenging emerging issues, which will be subject to analysis in the following chapters of the thesis.

3 International and national regulation of the pollution from cruise vessels

3.1 International legislation related to the accidental and operational pollution from cruise vessels in the Arctic

3.1.1 Introduction

This aim of this chapter is to analyse the main current international regulations of the marine environmental pollution applicable to the cruise vessels navigating in the Arctic and what possibilities these regulations provide for the coastal States in terms of regulation the cruise ships pollution to the marine environment.

As it was discussed in the previous chapter, the increase of cruise shipping in the Arctic may pave the way to greater marine environmental pollution, which is why the special measures should be developed to prevent or reduce such risks. This idea was emphasized by the five Arctic coastal States in the Ilulissat Declaration.[46] Consequently, the legal options, which the coastal State has to regulate cruise ship pollution will be analysed in this chapter.

In this connection, the regulatory framework is based on the two main international legal instruments that control the questions of marine environmental pollution – the 1982 United Nations Law of the Sea Convention and the IMO MARPOL 73/78 Convention. The UNCLOS sets the rules for the vessels navigation and establishes the measures for the marine environmental protection, which are pertinent to the regulations of the International Maritime Organization (IMO), which are in their turn intended to provide the maritime safety and security. Together with that in this chapter, the IMO Polar Guidelines specifically tailored to the regulation of the ships navigation in the Arctic and the AECO Guidelines made for the cruise ships operating in the Arctic will be analysed with particular emphasis on protection of the marine environment from pollution.

3.1.2 LOS Convention

3.1.2.1 General obligations to regulate vessel-source pollution

The LOS Convention established ‘a fundamental shift from power to duty as the central controlling principle of the legal regime of the marine environment.”[47]

[46] The Ilulissat Declaration 2008.
[47] Boyle (1995) p. 370.

The LOSC codified the most important principles regulating the protection of the marine environment *inter alia* from vessels pollution and made them obligatory to the States-parties to the Convention. Hence, in this part the general duties of the States to regulate cruise ship traffic to avoid pollution will be examined.

The cruise vessels are not explicitly mentioned in the LOS Convention, which means that there are no provisions that would be designed particularly prescribing regulations of cruise liners navigation or measures that should be taken by the States to prevent marine environmental pollution from them. Nevertheless, as long as the convention applies to all ships, they are included into it being a certain type of ship.

The key provisions on vessel-source pollution in the LOS Convention are formulated in Part XII devoted to the Protection and Preservation of the Marine Environment. Stipulated by the Article 194 (3), "[t]he measures taken pursuant to this Part shall deal with all sources of pollution of the marine environment". However, for the scope of the thesis, only the analysis of pollution by vessels is presented.

Questioning the main Articles of the Part XII, the focus is set on which obligations these Articles provide for the States in terms of taking measures to protect the environment from the impacts of cruise vessels. The first provision of the Section 1 reads as follows "States have the obligation to protect and preserve the marine environment", which is explicitly reflected in the Article 192. This is a general obligation for all the States. This Article enacts a due diligence obligation to the States to protect the marine environment in order to fulfil their duties.[48] The due diligence obligation applies equally on all States and obliges them to take the measures prescribed by the relevant provision, i.e. by the Article 192 to protect and preserve the marine environment.[49] The principle of the due diligence determines the level of the State responsibility to protect the marine environment distinguishing the lawful and unlawful acts.[50] Nonetheless, this obligation allows very broad interpretation.

Further on, this general provision is elaborated in the Article 194 concerning the measures to prevent, reduce and control pollution of the marine environment. This obligation in the Article 194 (1) entitles the States either individually or in co-operation with each other to take "all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment", which basically means

[48] Verheyen (2005) p.224.
[49] Ibid, p.223.
[50] Sands (2002).

that the awareness of the States about potential risks of pollution has to play an important role in the steps which they are going to take in order to avoid it. The States are responsible to provide the measures that are able to primarily prevent pollution to the greatest possible extent using "the best practicable means at their disposal and in accordance to their capabilities" under the Article 194 (1). Unquestionably, the Arctic States have different capacities to deal with marine pollution and in present it is not possible to prevent totally all sorts of pollution, e.g. the different types of waste on the cruise vessels will always be produced and operational discharge will exist as a normal process of ship activity, therefore a second step is to mitigate pollution and to minimize its negative effects. Thus, according to the Article 194 (2) the States are in charge of marine pollution control, i.e. that the activities under their jurisdiction should not cause damage to the environments of other States.

Along with that, under the Article 194 (3) the States should take measures "designed to minimize to the fullest possible extent" the pollution to the marine environment. Paragraph (3)(b) of the Article 194 specifies that the States have to consider in particular the measures to prevent pollution from vessels accidents and discharges.

Further on, stipulated by the Article 194 (5) "[t]he measures … shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life." Following this provision, such measures can be applicable to the Polar marine areas[51], e.g. to the Arctic as it represents a rare and fragile ecosystem.

The States are also obliged to take measures to prevent, reduce and control marine environmental pollution produced by introduction of alien or new species from one to another different marine area because it can cause serious damages to the environment.[52] For instance, the problem of ballast water exchange creates serious dangers to the marine environment. When the vessel is travelling from the Antarctic to the Arctic and discharges the water in another environment this way introducing another species that can lead to the harmful consequences, especially in case this is repeated on a regular basis because of the growth of cruise activity.

In order to provide the protection of the marine environment, stipulated by the Article 197, the States are entitled to establish cooperation on a global or regional basis.

[51] Joyner (1995) p.314.
[52] UNCLOS Art. 196.

Together with that, States shall provide monitoring of the risks or effects of pollution of the marine environment, which is laid down in the Article 204, and when the States have reasons to believe that the vessels under their jurisdiction may cause pollution or harm to the environment, they should provide the assessment of potential effects of such activities.[53]

Concerning particular rules directed at prevention, reduction and control of the pollution of the marine environment, the UNCLOS provides in Section 5 the Article 211, which stipulates the State-parties obligations for the aforementioned purpose of the Article in relation to the pollution from vessels. The paragraph 1 of the Article 211 mentions the following measures, "States … shall establish international rules and standards to prevent, reduce and control pollution of the marine environment from vessels and promote the adoption, in the same manner, wherever appropriate, of routeing systems designed to minimize the threat of accidents which might cause pollution of the marine environment, including the coastline, and pollution damage to the related interests of coastal States. Such rules and standards shall, in the same manner, be re-examined from time to time as necessary."

Reflecting on how adequate these aforementioned LOSC regulations are, it is important to understand that they provide general guidelines without giving particular specification on which exact measures are sufficient to be taken by the States to prevent or minimize vessel pollution to the marine environment. The Article 192 has a broad scope and is not absolute. The line of the Article 194 "using for this purpose the best practicable means at their disposal and in accordance with their capabilities" gives the States relative freedom of actions because it does not provide which means and capabilities would be sufficient to fulfil this regulation. Furthermore, under the LOSC it is hard to provide the control of how the States follow the relevant regulations because it is not easy to measure whether they used their best means to prevent, reduce and control pollution while the ships are in the process of voyage. Especially challenging is to check how the ships are using their equipment to minimize the waste discharges in the waters during their voyage. Only in certain cases and when the accidents occur it is possible to undertake inspections to verify that the ships followed the prescribed regulations.

[53] UNCLOS Art .206.

3.1.2.2 Coastal State jurisdiction

To achieve the destination of the Arctic waters the cruise ships inevitably have to pass through the maritime zones of the Arctic coastal States. Thus, they become subject to the coastal State control and jurisdiction. Having analyzed the general obligation of all States related to the protection of the marine environment from the vessel source pollution, the question follows as what particular measures can the coastal Arctic State take to regulate cruise ship traffic in its maritime zones to avoid pollution? To answer this question, in this part the focus will be set on the provisions related to the coastal State prescriptive and enforcement jurisdiction in terms of marine pollution prevention from vessels. Due to the limited scope of the thesis, the port and flag State jurisdictional issues will not be regarded.

Prescriptive jurisdiction of the coastal State is linked to the concept of the "generally accepted international rules and standards" (GAIRAS), to which the LOSC refers in the Part XII, in particular, in the Articles 211 (2, 5, 6), and in the Article 21 (2). Such rules, regulations and standards for the prevention of the vessels pollution should be implemented through the "competent international organization", which is the IMO.

Therefore, it can be considered that the standards and rules codified and made mandatory in IMO instruments are in this case to be regarded as GAIRAS. However, it is unclear how exactly these rules and standards have to be determined. Therefore, as the main aim of GAIRAS is to be "generally accepted" by the majority of the States, then those international rules and standards, which have been in the State practice, can be regarded as GAIRAS. For instance, the IMO MARPOL 73/78 Convention.[54]

The prescriptive jurisdiction of the coastal State differs depending on which maritime zone it applies to. The Article 2(1) of LOSC lays down the right of the coastal State to exercise its sovereignty and jurisdiction in its internal waters, where the Article 211 (3) limits this right by the obligation of the State "to give due publicity to such requirements and … communicate them to the competent international organization" and is "without prejudice to the continued exercise by a vessel of its right of innocent passage"[55].

Concerning the vessels navigation in the territorial sea, the Article 21(1) of the LOSC says that the coastal State may adopt laws and regulations in relation to the vessels

[54] Report of the Committee on Coastal State Jurisdiction relating to Marine Pollution (2000).
[55] UNCLOS Art. 211(3).

exercising innocent passage in respect of "the safety of navigation and the regulation of maritime traffic; … the conservation of the living resources of the sea; … the preservation of the coastal State environment and the prevention, reduction and control of pollution thereof." The cruise vessels complying with such regulations of the coastal State are considered to be exercising the right of the innocent passage through its territorial sea, stipulated by the Articles 17 and 18 of the LOSC.

This jurisdiction is limited by the Article 211(4) and Article 24 (1), which say that in the exercise of its sovereignty within its territorial sea in order to prevent, reduce and control the marine pollution from foreign vessels, including vessels exercising the right of innocent passage, the coastal State must not hamper innocent passage of those foreign vessels. Together with that, under the Article 21(2), such laws and regulations must not apply to the construction, design, equipment and manning (CDEM) standards of vessels unless they are giving effect to GAIRAS. In relation to the jurisdictional framework for the pollution from ships under the LOSC, the CDEM standards are those established by the IMO, which are to be accepted internationally. Which literally means that in case the CDEM standards of the ships are not in conformity with the GAIRAS, the coastal State has a right to use its prescriptive jurisdictions towards these vessels, however at the same time the LOSC does not provide any example of the generally accepted standards which have to be followed, thus giving the coastal State relative freedom to apply more stringent measures to the vessels navigating in its territorial sea.[56]

Concerning the transit passage of the vessels in the straits used for international navigation, the Article 42 (1) (b) of the LOSC provides that the coastal State may adopt laws and regulations in relation to "the prevention, reduction and control of pollution, by giving effect to applicable international regulations regarding the discharge of oil, oily wastes and other noxious substances in the strait"[57]. By 'applicable international regulations' are meant international conventions regulating pollution, such as the IMO MARPOL Convention. However, following the Article 42 (2), such regulations "shall not discriminate in form or in fact among foreign vessels or in their application have the practical effect on denying, hampering or impairing their right of transit passage"[58]. Together with that as the Article 42 (3) says, due publicity to all such laws and regulations shall be given.

[56] Molenaar (1998).
[57] UNCLOS Art.42 (1)(b).
[58] Ibid Art.42 (2).

In the Exclusive Economic Zone (EEZ), the Article 56(1) (b) (iii) of LOSC provides that the coastal State exercises its jurisdiction with respect to the protection and preservation of the marine environment and may enact laws and regulations to prevent, reduce, and control pollution from vessels in the EEZ. According to the Article 211(5), such laws and regulations must be in conformity with GAIRAS established through the IMO. The main aim of this limitation is to ensure uniformity in international shipping and to provide the freedom of the vessels navigation,[59] as the foreign vessels enjoy the rights of freedom of navigation in the EEZ.[60]

Concerning maritime casualties in the EEZ of the coastal State, the Article 221(1) distinguishes the international customary and conventional rights of the States to take and enforce measures to protect their coastline from pollution or threat of it because of the maritime casualty or acts relating to such a casualty, which may lead to major harmful consequences.

Following the Article 211(6) of UNCLOS, where the international rules and standards are inadequate to meet special circumstances, in its EEZ the coastal State may adopt national laws and regulations of pollution from ships. The factors that must be considered in this case are the oceanographical and ecological conditions of the area, its maritime traffic and the utilization or protection of the resources. The Article 211(6) (a) and (b) provides which conditions are to be fulfilled to adopt the special mandatory measures. Most importantly in this regard the State shall consult with the IMO.

Generally, the prescriptive jurisdiction of the coastal State for the vessel-source pollution is subject to the decision of the State under the LOS Convention and cannot be more stringent than GAIRAS. Nevertheless, there is an exception to this laid down in the Article 234 of the LOSC and is specifically dealing with ice-covered areas, which allows coastal States to apply more stringent standards than GAIRAS particularly in relation to the questions of prevention, reduction and control of marine pollution from vessels in the Arctic marine areas for the most part of the year.

However, the legal interpretation of this provision of the LOSC has been very controversial, especially concerning the wording “where”, “due regard” and within the limits of the exclusive economic zone” (EEZ)[61]. First of all, the interpretation of the word “where” complicates the complete understanding as it is not clear which particular areas

[59] Molenaar (1998) p.363.
[60] UNCLOS Art.58 (1).
[61] Brubaker (2005) p.54, Bartenstein (2011) p. 28.

may be included in the scope of the provision. Then, the wording "due regard" means that the States have not only to think of the environmental protection but also to take into consideration the necessity of the navigational activities of the foreign vessels in the ice-covered areas.[62] Moreover, the line "within the limits of the exclusive economic zone" stipulates that the establishment of the EEZ is the condition for the State to be able to apply this Article in practice. Thus, the question is whether it is possible to apply the Article 234 to the territorial sea, as the EEZ is an area beyond and adjacent to the territorial sea, laid down by the Article 55 of the LOSC. This is a controversial issue, as e.g. following Churchill and Lowe the wording "within the limits of the EEZ" may include the territorial sea.[63] Moreover, as the initial aim of the Article 234 was to provide additional environmental protection to the ice-covered areas which need special considerations because of their specific characteristics, this could allow the coastal State to apply this Article within the 200 nm, including the territorial sea.[64]

Hence, on the one hand, this Article allows coastal States to adopt laws and regulations for the prevention, reduction and control of marine pollution from vessels. On the other, it makes ambiguous this possibility and creates limits for national legislation under international law concerning vessels navigation in ice-covered waters.

In view of the climate changing towards the global warming and the melting of the ice, the areas covered by it are steadily decreasing, which inevitably points out to the fact that the relevance of the Article 234 will have to be reconsidered.[65]

Enforcement jurisdiction of the coastal State is also dependent on the maritime zone in which the violation to the law has been committed. In the territorial sea under the Article 220 (2) of LOS the coastal State has a right to undertake physical inspection of a vessel in case this vessel violated laws and regulations of that State for the prevention, reduction and control of pollution from vessels, when it had "clear grounds" that the vessel did violate such laws, which means that there should be given a proof of the violation commitment fact, which is not always available to get.

In the EEZ, the provisions of LOS Convention codified in the Article 220 (3) – (7) contain the rights of enforcement jurisdiction of the coastal State to the vessels in cases of violations to international rules and standards for the prevention, reduction and control of

[62] Bartenstein (2011).
[63] Churchill/Lowe (1999) p. 348.
[64] Brubaker (2005) p. 57.
[65] Molenaar (2005).

pollution from occurred in the EEZ by vessels navigating either in the EEZ or the territorial sea.

In cases when there is evidence of the fact that the vessel committed a violation by substantial discharge resulting in significant pollution of the marine environment in the territorial sea or the EEZ, according to its laws, the coastal State may institute the proceedings[66]. When the condition of the "clear grounds"[67] that the ship created threats of the pollution of the marine environment has to be proved, then the coastal State may undertake only physical inspection of the vessel. In case when the coastal State has "clear objective evidence"[68] regarding the violation, it may exercise more stringent proceedings, such as the detention of the vessel.

Additional instrument in disposal of the coastal State laid down in the Article 211(1) of the LOSC is the enforcement power to prevent actual or threatened damage to the coastline or related interests from pollution following up the maritime casualty, which might result in major harmful consequences for the marine environment. Nevertheless, taking into consideration that the foreign vessels enjoy the rights of freedom of navigation in the EEZ according to the Article 58(1) and the right of innocent passage in the territorial sea following the Article 17 of the LOSC, the enforcement of international regulations of the coastal State in this maritime zone is even more restrictive.

The application of the LOS convention to the cruise vessels navigating in the Arctic marine areas remains complicated because it is hard to monitor the levels of compliance of the cruise operators with the LOSC provisions. Besides, some of the provisions are not made clear under which circumstances they have to be applied, which leaves uncertainties in legislation. Thus, the decisions for the vessel detention are to be made mostly by the flag State, with certain exceptions when the clear grounds of objective evidence are warranted the coastal State may enforce its jurisdiction and in some cases the coastal State may as well provide measures more stringent than generally accepted by the IMO, such as under the Articles 21 (2) and 234 to prevent pollution from vessels. Otherwise, the coastal State rights are relatively limited. In its EEZ the coastal State may adopt regulations that are generally accepted by the IMO and for CDEM standards there is also a requirement in the territorial sea that they are generally accepted.

[66] UNCLOS Art. 220 (5).
[67] Ibid Art. 220(3) (5).
[68] Ibid Art. 220 (6).

Together with the 1982 United Nations Convention on The Law of the Sea, the regulation of the marine pollution on the international level is performed by the legal instruments of the IMO, which is the international organization that basically sets the GAIRAS for the vessels.

3.1.3 The International Maritime Organization instruments

The general regulation of the marine vessel-source pollution on the international level is mainly done within the International Maritime Organization (IMO), which represents the United Nations' specialized agency and bears the responsibility for safety and security of shipping and prevention of marine pollution by ships.[69]

The IMO's mission statement for the period from 2010 to 2015 is: "…to promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation. This will be accomplished by adopting the highest practicable standards of maritime safety and security, efficiency of navigation and prevention and control of pollution from ships, as well as through consideration of the related legal matters and effective implementation of IMO's instruments with a view to their universal and uniform application."[70]

In relation to IMO's implementation mandate, there are three main spheres: vessel-source pollution, maritime safety and security. In this work the focus is set only on the first one. Nevertheless, the significance of the IMO rules and standards aimed at ensuring maritime safety is highlighted because they also contribute to the pollution prevention.

3.1.3.1 MARPOL 73/78

The most significant of all measures against pollution is the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78). It covers not only accidental and operational oil pollution but also pollution by chemicals, goods in packaged form, sewage, garbage and air pollution. Another time, there is no provision which would have distinguished cruise vessels from other ships, but as long as the Convention applies to all ships, cruise liners are considered being included in its scope.

[69] Introduction to IMO. http://www.imo.org/About/Pages/Default.aspx. Viewed on 01.06.2012.
[70] Ibid.

MARPOL is one of the most important conventions adopted by the IMO. It comprises six annexes: Annex I contains regulations for the Prevention of Pollution by Oil, Annex II – Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk, Annex III: Regulations for the Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form, Annex IV: Regulations for the Prevention of Pollution by Sewage from Ships, Annex V: Regulations for the Prevention of Pollution by Garbage from Ships, Annex VI: Regulations for the Prevention of Air Pollution from Ships.

Concerning the Arctic coastal States participation in this convention, Norway, Denmark and Canada have ratified all Annexes of the convention, the United States has ratified all apart from annex IV and Russia has ratified all but annex VI.

The MARPOL stipulates Special Areas in Annexes I, II and V and SOx Emission Control Areas in Annex VI where more stringent discharge standards apply. Nevertheless, no part of the Arctic marine area currently falls within either a Special Area or a SOx Emission Control Area. Alternatively, the Antarctic area has been designated as a Special Area under Annexes I, II and V and the special discharge standards are currently in effect there as well.

Regarding the regulation of the operational pollution, MARPOL does not apply to grey water. Sewage when treated may be discharged "at a distance of more than 4 nautical miles from the nearest land or sewage which is not disinfected at a distance of more than 12 nautical miles from the nearest land"[71] and beyond. Bilge water can be discharged only after it has been treated and the oil component is not more than 15 parts per million when the ship is beyond 12 nautical miles from the coast.[72]

The most stringent regulations MARPOL has in the Special Areas where only food waste is allowed to be discharged. However the Arctic is not included in them, thus the ships there may discharge all sorts of garbage, e.g. paper products, glass, metal, rags, bottles, etc., excluding plastics within the distance 12 nm of the nearest coast. In case the garbage is grounded, it may be released up to 3 nm from shore[73]. But "when the garbage is mixed with other discharges having different disposal or discharge requirements the more stringent requirements shall apply."[74]

[71] MARPOL 73/78 Annex IV Regulations for the Prevention of Pollution by Sewage from Ships. Regulation 8 Discharge of sewage 1(a).

[72] Ibid Annex I.

[73] Ibid Annex V Regulations for the Prevention of Pollution by Garbage from Ships Regulation 3 Disposal of garbage outside Special Areas.

[74] Ibid (2).

Even though MARPOL regulates major types of pollution from cruise vessels, there still remain significant problems because the marine life exists not only within the areas designated by this convention, where it is prohibited to discharge waste, but also in the other parts of the maritime zones and still creates major threats to the environment, especially fragile in the Arctic.

With particular relation to the cruise shipping, special attention is paid to the Cruise Lines International Association (CLIA), which is the world's largest cruise association. In fulfilling its regulatory function it serves as a non-governmental consultative organization to the IMO.[75] "Through the IMO, the United States and flag and port States, CLIA has developed consistent and uniform international standards that apply to all vessels engaged in international commerce… These standards are set forth in … MARPOL."[76]

The cruise industry under the auspices of CLIA is highly committed to protect the environment and is working on the employment of the waste management standards and technologies on its vessels. For instance, one of the major developments is the implementation of a policy of zero discharge of MARPOL Annex V solid waste products (garbage) using more comprehensive waste minimization procedures to significantly reduce shipboard generated waste.[77]

In relation to other types of waste produced on boards of the cruise liners there is a list of standards that cruise vessels operators have agreed to follow, however as long as these measures remain beyond the framework of the legally-binding international legislation, they are optional and will give positive effect on the protection of the marine environment only if being implemented by the cruise operators – members of CLIA.

The Arctic is not designated as a Special Area in MARPOL as it does not qualify under the Special Area requirements. A special area is defined as "a sea area where for recognized technical reasons in relation to its oceanographical and ecological conditions and to the particular character of its traffic, the adoption of special mandatory methods for the prevention of sea pollution by oil, noxious liquid substances, or garbage, as applicable, is required."[78] According to the Guidelines for the designation of Special Areas under MARPOL 73/78, in order to designate a Special Area, the State must prove that basic

[75] About CLIA http://www.cruising.org/vacation/about-clia Viewed on 15.06.2012.

[76] CLIA Industry standard. Cruise industry waste management. Practices and procedures. http://www.cruising.org/sites/default/files/regulatory/pdf/CLIA%20Waste%20Management.pdf. Viewed on 17.06.2012.

[77] Ibid.

[78] IMO Assembly Resolution A.927(22).

MARPOL requirements do not cover adequate protection for the requested area. Furthermore, a Special Area has to be established unless only when the adequate reception facilities are available.[79] Therefore, the Arctic is not adopted as the Special Area under MARPOL. However there are other specific guidelines provided by the IMO that include the regulation of the vessels navigation and environmental considerations in the Arctic, which will be discussed in the following part of the chapter.

3.1.3.2 Specific regulations applicable to the Arctic - IMO Polar Shipping Guidelines

The special guidelines particularly designed to solve the issues of navigation in the Arctic region, which were accepted internationally, were primarily addressed in the 2002 and were named the IMO Guidelines for Ships Operating in Arctic Ice-covered Waters. Also known as The Arctic Shipping Guidelines, they are not mandatory and have merely recommendatory character.

The voluntary Arctic Guidelines apply to ships operating in Arctic ice-covered waters, including passenger ships and cargo ships of 500 gross tonnage or more engaged in international voyages in ice-covered waters.[80] The area of application is defined in the paragraph G-3.2. Conversely, some areas are excluded, e.g., the mainland coast of Norway, and the waters adjacent to the Kola Peninsula in Russia.[81]

The aim of the IMO Arctic Shipping Guidelines was to provide additional requirements to MARPOL and SOLAS Conventions. Thus, these guidelines stipulate the special requirements and demands for the ships' CDEM standards operating in the Arctic waters due to the special climatic conditions, remote location and the fact that ships are more exposed to dangers of accidents than in the other marine areas. Hence, they emphasize that the Arctic as a significant area for international shipping. However, they do not contain discharge, emission, navigation or contingency standards; several CDEM standards have a clear aim to prevent or control vessel-source pollution.

The Arctic Guidelines provide the most comprehensive standards for ships in ice-covered waters, including construction, equipment and operational matters. They consist of four parts. The first one provides construction, subdivision and stability in damaged

[79] IMO Assembly Resolution A.927(22).
[80] Jensen (2007) p.11.
[81] Ibid.

condition recommendations for new *Polar Class* ships. According to the guidelines the ships are classified into seven categories depending on the intended ship operations and the level of ice in the area.

"Ships should be able to withstand flooding resulting from hull penetration due to ice damage. No pollutants should be carried directly against the hull in areas of significant risk of ice impact. Operational pollution of the environment should be minimized by equipment selection and operational practice. Navigational, communications, safety-related survival and pollution control equipment should be appropriate for Arctic conditions.

The second part applies to *Polar Class* and non-*Polar Class* ships and includes recommendations on fire safety, fire detection and extinguishing systems, life-saving appliances and arrangements and navigation equipment in conformance with SOLAS…

Part three is related to the ship operations, crewing and emergencies. Ships should carry operating manuals, as well as training manuals with relevant information concerning operations in ice-covered waters, including emergency procedures. Qualifications and training for crew and ice navigators are suggested."[82]

"Part four provides for environmental protection and damage control equipment, recognizing the navigational and environmental hazards and limited response capabilities for assistance in Arctic ice-covered waters. All ships navigating in Arctic ice-covered waters should be adequately equipped and their crews properly trained to provide effective damage control and minor hull repair, as well as containment and clean-up of minor spills."[83]

In 2004 the XXVIIth Antarctic Treaty Consultative Meeting (ATCM) for IMO decided to amend these guidelines in order to include ships operating in ice-covered waters in the Antarctic into their scope.

Consequently, in 2009 the new Guidelines for Ships Operating in Polar Waters were adopted by the IMO. As stipulated by the Guidelines, their purpose is to provide additional protection to the ships navigating in the Polar waters and to minimize the risk to which the vessels are imposed because of the severe environmental and climatic conditions. Together with that, they aim to provide that all ships navigating in Polar waters are equipped and are able to function adequately to prevent accidents which may lead to

[82] AMSA 2009 Report. p.56. Arctic council, April 2009, second printing (http://www.pame.is/images/stories/PDF_Files/AMSA_2009_Report_2nd_print.pdf). Viewed on 01.06.2012.

[83] Ibid p.57.

major harmful consequences for the marine environment. Specifically, the forth part is dedicated to the environmental protection and damage control and mostly bears the general character. Explicitly, there is only one provision concerning procedures for the protection of the marine environment under normal operations (16.3), which says that during the ship operation process any applicable national and international rules and regulations and any other necessary measures related to operational discharges and emissions from ships[84], etc. should be taken.

Having non-legally binding nature, these guidelines do not set any obligations to the States in relation to the operations of their cruise ships and only serve as an addition to the applicable international and national rules and regulations. However, they were created for certain purposes; thus, the question is whether they can be considered as 'generally accepted international rules and standards'?

Being the instrument of the 'soft law', the Polar Guidelines by their wording are recommendatory. The effectiveness of the guidelines in reality depends on the decisions of the States, ship owners and vessels crews. Being non-legally binding, there is no procedure that could monitor the compliance with these guidelines. The application can be observed only via the State practice when the States involve the guidelines into their coastal State practice.

For the moment, none of the Arctic States "has implemented the regulations through binding legislation: they remain international recommendatory provisions only. In that respect, their effect stands untested"[85]. As a result, the current Polar Guidelines 2009 can be considered to not qualify as GAIRAS because their application is not a widespread practice by the States.

Because of the critics especially from Denmark, Norway, United States for different deficiencies these Guidelines are currently under revision by the IMO in order to develop more elaborated and mandatory Polar Code. As stated by the IMO, the new Code is intended to address the full variety of issues related to the safe navigation of the ships operating in Polar waters, especially taking into account the rapid growth of the navigation in these regions, which may lead to the increase of the marine environmental pollution and cause harm to these unique locations. The differences between the Arctic and Antarctic will be also taken into consideration during the development of the new Code.

[84] Polar Shipping Guidelines adopted by IMO Assembly Resolution A.1024 (26), 2 December 2009. Part D 16.3.

[85] Jensen (2007) p.17.

3.1.4 AECO Operational guidelines

These guidelines are aimed to be followed by the cruise operators and members of Association of the Arctic Expedition Cruise Operators, they are not meant to substitute the existing legal framework and are non-legally binding. The main intention of these guidelines is to supplement and strengthen the set of available legal tools and to support the protection of the Arctic environment. All AECO-members already work according to a large set of operating manuals and internal guidelines, and in accordance with existing laws and regulations.[86]

3.1.5 Conclusion

The analysis of the main international legal instruments has shown that there are certain gaps in the regulation of the environmental pollution in the Arctic.

First of all, concerning the level of participation in relevant international instruments, not all Arctic States are parties to the most important Conventions. For example, the United States is still not a party to The UNCLOS, despite the majority of its articles apply as the international customary law. Moreover, not all Arctic States have ratified all the annexes of the MARPOL 73/78. The main challenge for the IMO regulations and standards to become legally binding is that they have to be ratified by all members.

There are mandatory international treaties but at the same time important guidelines still remain non-legally binding. The existing international legislation regulates operational pollution from the cruise ships in a very limited way and with the increase of the shipping activity, huge amounts of tonnes of waste, e.g. grey water, heavy metals and other toxic substances will be discharged in the Arctic waters, having hardly been treated. The national law have gone further in the questions of the environmental protection of the marine areas within national jurisdiction, however in the international waters this legislation is lacking.

In this chapter the main treaties within the international legal framework have been analysed. The LOS Convention and the MARPOL 73/78 Convention have a global scope of application and spread over the entire marine Arctic. However, there is no other more

[86] AECO Guidelines. (http://www.aeco.no/guidelines.htm). Viewed on the 27.07.2012.

detailed and specific regulation approved by all Arctic States as well as the Arctic States do not have any regional approach to provide compliance with international and national rules, standards and laws. Furthermore, the level of States, ship owners, operators and crew compliance with the IMO Arctic Shipping Guidelines and the IACS Unified Polar Class Requirements remains ambiguous.

The coastal State prescriptive and enforcement jurisdiction has certain possibilities, e.g. the Articles 21, 211, 234, etc. of the UNCLOS in relation to adopt the laws and regulations for the protection, preservation and control of the marine environment from the vessel-source pollution. However they are subject to restrictions according to the relevant provisions of the LOS Convention, which was discussed hitherto.

The annexes in MARPOL 72/78 regulate certain types of pollution, however first of all not all of them, secondly the level of compliance should be better monitored, because a large amount of vessels break the laws and discharge the contaminated water and other litter in the ocean space where it is forbidden to do so.

It is necessary to work out unified harmonized international mandatory Code for the ships operating in Polar waters, which will bring contribution to the marine safety and prevention of the environmental pollution, because the existing variety of the technical and other types of national requirements from the Arctic States creates a disorder and difficulties of compliance. The work under the development of the new unified Polar Code is currently being done within the IMO. The code is planned to be legally binding instrument for all kinds of vessels navigating in both Polar Regions: the Arctic and the Antarctic. The initial aim of this Code is to ensure safe operation of ships in the sea areas covered with ice, which nowadays bring special navigational challenges and can potentially cause serious damages to the marine environment, and to prevent pollution in Polar waters, especially taking into account the growth of the cruise vessels navigation in the Arctic marine area. The introduction of this Code, which will provide the common rules and standards for all the vessels, will facilitate the implementation of the international legal framework in the Arctic. Preliminary, the Code is previewed to be finalized by the 2015. The increasing cruise ship traffic in the Arctic demands new international regulation concerning the environmental issues but at the same time the coastal States implement their own national legislation, e.g. in 2007 an environmentally important ban on the presence of Heavy Fuel Oil on board ships in Svalbard’s eastern waters was introduced by Norway, which will be discusses in the following chapter.

3.2 Norwegian national regulation of the marine environmental pollution from cruise vessels in the Arctic

3.2.1 Introduction

This chapter will examine the main measures aimed at the regulation of the marine environmental pollution from cruise ships navigating in the Arctic waters under national Norwegian jurisdiction with specific focus on Svalbard.

Talking about the Arctic, in the Norwegian Government's strategy there were always references to the High North, which was proclaimed a very important strategic area in the Norwegian policy.[87] In its High North Strategy the Norwegian Government has given a priority to provide the development of the tourist industry in the Northern Norway and Svalbard but at the same time it emphasizes the importance to preserve high environmental values of these vulnerable Arctic areas as a part of cultural and natural heritage.[88]

Norwegian maritime zones cover huge area in the Arctic. Recently, the number of cruise vessels navigating to Norwegian Arctic locations has increased. The main aim, therefore, is to find the appropriate balance between the cruise-based tourist activities and strict environmental framework.

Apart from the international regulations that have been analysed in the previous chapters, all tourist operators in the Arctic waters must comply with national laws and local jurisdiction. In Norway the official agency who is bearing responsibility for the protection of the coast and national waters from pollution and is in charge of the coastal management, marine safety and communication is the Norwegian Coastal Administration (NCA).

"The main objective of the NCA is to ensure safe and efficient navigation in the fairways along the coast and into ports, as well as national preparedness for acute pollution. The Norwegian Coastal Administration participates in coastal planning and exercises authority pursuant to the Harbour and Fairway Act and Pilotage Act, as well as parts of the Pollution Act, Svalbard Environmental Act."[89]

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[87] The Ministry of Foreign Affairs. The High North. http://www.regjeringen.no/en/dep/ud/campaigns/the-high-north.html?id=450629. Viewed on 29.06.2012.

[88] Ibid.

[89] The Norwegian Coastal Administration. Coastal Administration's main tasks. http://www.kystverket.no/en/About-Kystverket/About-the-NCA/Coastal-Administrations-main-tasks/. Viewed on 01.07.2012.

For the purpose of reduction of the risk of shipping accidents in Norwegian waters, there were issued the Regulations relating to maritime traffic in specific waters applied *inter alia* to passenger vessels.[90]

The Norwegian marine Arctic areas represent fragile ecosystems, which are in need of serious environmental protection. The archipelago of Svalbard in this sense occupies a unique position, its pristine natural environment, distinctive wilderness and vulnerable marine ecosystems have been positioned by the Norwegian Government as a priority sphere of the environmental policy of the State. The central objective is to make Svalbard one of the world's best managed wilderness areas.[91] Therefore, in this subchapter the focus will be set on the national measures provided to protect marine environment from cruise ships pollution in Svalbard.

3.2.2 Regulation of marine environmental pollution from cruise vessels in Svalbard

"The Arctic archipelago of Svalbard is located halfway between Mainland Norway and the North Pole. It is surrounded by the Norwegian Sea and the Greenland Sea to the West, the Barents Sea to the East and the Arctic Ocean to the North."[92] (Figure 5)

Svalbard attracts special attention of cruise liners visitors. "In recent years, the number of cruise ships and other vessels calling at Svalbard has increased. Because of the special conditions in Svalbard's waters, this poses particular challenges related to safety and the environment."[93] Its geographical location has particular strategic importance in the North in terms of its distinctive wild nature, which is why strict control and protection of

[90] REG 2009-12-15 no. 1684: Regulations relating to maritime traffic in specific waters http://www.kystverket.no/Documents/Engelsk/Regulation%20relating%20to%20maritime%20traffic%20in%20specific%20waters%20(Unofficial%20translation).pdf Viewed on 02.07.2012.

[91] Norwegian Ministry of Foreign Affairs. Report No. 30 (2004–2005) to the Storting. Opportunities and Challenges in the North. http://www.regjeringen.no/en/dep/ud/documents/propositions-and-reports/reports-to-the-storting/20042005/report_no-30_to_the_storting_2004-2005.html?id=198406. Viewed on 10.07.2012.

[92] Fife R. E., Director General, Legal Affairs Department, Royal Ministry of Foreign Affairs, Oslo Svalbard and the Surrounding Maritime Areas http://www.regjeringen.no/en/dep/ud/selected-topics/civil--rights/spesiell-folkerett/folkerettslige-sporsmal-i-tilknytning-ti.html?id=537481 Viewed on 02.07.2012.

[93] Norwegian Ministry of Foreign Affairs. Report No. 30 (2004–2005) to the Storting. Opportunities and Challenges in the North. P. 22. http://www.regjeringen.no/en/dep/ud/documents/propositions-and-reports/reports-to-the-storting/20042005/report_no-30_to_the_storting_2004-2005.html?id=198406 . Viewed on 10.07.2012.

its unique environment is needed. “Navigation in many of the waters around Svalbard is often difficult. This is due to ice, wind, light and depth conditions, all of which make both accident prevention and contingency planning particularly challenging in these waters.”[94]

Figure 5. The Map of the Norwegian Maritime Boundaries[95]

According to the Spitsbergen Treaty 1920, Spitsbergen, or more commonly Svalbard, was recognized to be under the full sovereignty of Norway.[96] This means that Norway exercises jurisdiction over archipelago, however due to stipulations of the Treaty certain restrictions are imposed to the enactment of Norwegian sovereignty, e.g. all States enjoy equal rights of residence and exercise of activities in Svalbard. In relation to Svalbard's environment, the Treaty imposes an obligation on Norway to protect it.

With particular emphasis on environmental issues, one of the most important regulations for the cruise vessels related to Svalbard archipelago is the Svalbard Environmental Protection Act. The area of its application is out to twelve nautical miles from the coast. This document comprises the collection of environmental legislation for Svalbard laying down key principles of environmental law with regard to notification

[94]Norwegian Ministry of Foreign Affairs. Report No. 30 (2004–2005) to the Storting. Opportunities and Challenges in the North. P.23. http://www.regjeringen.no/en/dep/ud/documents/propositions-and-reports/reports-to-the-storting/20042005/report_no-30_to_the_storting_2004-2005.html?id=198406 . Viewed on 10.07.2012.

[95] Norwegian Maritime Boundaries. Map by Norwegian Military Geographic Service. http://www.regjeringen.no/en/dep/ud/selected-topics/civil--rights/spesiell-folkerett/folkerettslige-sporsmal-i-tilknytning-ti.html?id=537481 Viewed on 03.07.2012

[96] The 1920 Spitsbergen Treaty. Art. 1.

rules, the precautionary principle, economic accountability for environmental damage, environment techniques.[97]

The Environmental Protection Act lays down the fundamental principle that "[a]ll access and passage in Svalbard shall take place in a way that does not harm, pollute or in any other way damage the natural environment or cultural heritage or result in unnecessary disturbance to humans or animals."[98]

Articles 67 and 68 of the Environmental Act prohibit discharges from ships and dumping and incineration of waste and other material correspondingly, "[h]owever, the discharge of uncontaminated waste food from small vessels or of sanitary waste water in the open sea is permitted."[99]

Besides the Svalbard Environmental Protection Act, there are other regulations relevant to cruise operators, e.g. Regulations relating to tourism and other travel in Svalbard issued by Royal Decree in 1991. Article 2 of these Regulations States that "[t]he Regulations apply to Svalbard's land territory and sea territory to the limit of the territorial waters." They provide the rules of notification, i.e. "[t]our operators shall give notice of their tour plans for each summer and winter season, and at the latest one month before the plan is advertised. New notice must be given of any significant changes in the plans thus notified. Tourist carriers shall give notice of plans to drop persons outside settled areas. For sea journeys notice shall be given of the sailing schedule, including any planned visits ashore."[100]

"The vessels are required to report their positions to the Norwegian Coastal Administration when they go into and out of the waters off Svalbard. This includes when the vessel arrives in or leave from a port, and when the vessels anchor or move from an anchorage. They must also report every twelfth hour when the vessel is underway."[101]

Pollution regulations of the Svalbard's environment were laid down by the Norwegian Ministry of the Environment in 2002 relating to environmentally hazardous substances, waste and waste water and waste management fees in Svalbard.

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[97] Governor of Svalbard. The Svalbard Environmental Protection Act. http://www.sysselmannen.no/hovedEnkel.aspx?m=45303. Viewed on 02.07.2012.

[98] Act of 15 June 2001 No.79 Relating to the Protection of the Environment in Svalbard. Art.73.

[99] Ibid Art.67.

[100] The 1991 Regulations relating to tourism and other travel in Svalbard. Art.7.

[101] Risk assessment regarding piloting service or pilot exemption certificate on Svalbard: Report to Norwegian Coastal Administration, Maritime Safety Department Rapport no.: 2010 - 0079 ENG 4 March 2010. P.7.

Concerning oil pollution, "[o]n 1. June the Norwegian Government imposed a ban on the use of Heavy Fuel Oil onboard ships inside the two large nature reserves covering most of the territorial waters of eastern Svalbard. The Government also decided that ships sailing in these waters are not allowed to carry more than 200 passengers."[102] This ban came into force in 2007 for the purpose of the protection of the vulnerable coastal environment and prevention the major negative environmental effects of the heavy and other types of oils discharges in the aforementioned area because the growing amount of cruise liners put the ecological situation under threat. In 2009 the ban was extended to include the national parks on the West of Svalbard[103].

Analyzing the purpose of introduction of this ban it is clear that it is intended to protect the marine environment of Svalbard. At the same time, in relation to CDEM standards the coastal State has limited competence to regulate them. According to the Article 21(2) of the LOSC the coastal State cannot apply such regulations if they give effect to the CDEM standards of vessels because it will mean that they hamper the innocent passage of the vessels thought the territorial sea of the coastal State. Therefore, the question is whether the fuel can be considered as a part of the ship construction, design, equipment or manning standards or not. The Article 21(2) does not refer to any fuel oil requirements. However, the fuel might be needed for the operational process of the vessel, thus the fuel oil requirement can be regarded as not the CDEM but the other type of standard necessary for the operational purposes. In this respect, the obligations concerning the fuel type are to be applied analogous to the CDEM standards in order to limit coastal State jurisdiction in the territorial sea[104].

Under the Article 234, the LOSC recognizes the right of the coastal State to adopt and enforce laws, which bear non-discriminatory character in order to prevent pollution in ice-covered areas, e.g. in Svalbard maritime zones. Such laws can be more stringent than IMO GAIRS. This provision incorporates the possibility to adopt more stringent standards for discharge as well as stricter CDEM standards. This exceptional provision allows Norway as the coastal State for the sake of protection of the vulnerable marine environment to adopt regulations for the vessels navigating in its territorial sea and EEZ.

[102] The Ministry of the Environment. The Norwegian Government ban the presence of Heavy Fuel Oil on board ships in Svalbard eastern waters. http://www.regjeringen.no/en/dep/md/press-centre/Press-releases/2007/The-Norwegian-Government-ban-the-presenc.html?id=469709. Viewed on 15.07.2012.

[103] Ibid.

[104] Ringbom (2008) pp.433-435.

However, as long as Norway has not established the EEZ around Svalbard, the article 234 is not applicable in this case[105].

Consequently, this question remains controversial as the interpretation of the aforementioned LOSC provisions is subject to a continuous legal discussion. According to the provision laid down in the Article 234, the introduction of the Heavy Fuel Oil ban cannot be legally justified action in the Svalbard territorial waters. Stipulated by the Article 21 (2) of the LOSC, the requirement imposed by Norway hampers the right of the vessels to exercise their innocent passage as the fuel standard can be regarded analogous to the CDEM standards. However, in case the heavy fuel requirement is not regarded as the CDEM the foreign vessels should comply with the coastal State laws and regulations, according to the Article 21 (4). Thus, concerning "the preservation of the environment of the coastal State and the prevention … of pollution" as the Article 21 (1) (f) says Norway as a coastal State is able to impose the Heavy Fuel Oil ban.

To provide additional regulations to the rising volume of cruise traffic around Svalbard, the Norwegian Harbour Act was made applicable to Svalbard in 2008 and was updated in 2010. The main aim was directed towards the protection of the marine traffic by improving maintenance of harbours.

In addition, the guidelines for the cruise vessels and tourists have been developed by the Norwegian Polar Institute, the tour operators and the AECO. They bear non-mandatory character but were made according to the international legislation and in certain aspects they are more stringent than the relevant existing laws.

3.2.3 Conclusion

The presence of cruise vessels in the Norwegian Arctic waters is inevitable and will continuously produce certain impacts on the marine environment. The operational pollution, e.g. the waste or ballast water, will take place on a regular basis; the possibility of negative effects from the accidents, e.g. oil spills, remains as well but is hard to predict.

Since the cruise tourism activity on Svalbard is a part of national Norwegian strategy for the future development, the key factor is to maintain it in the best possible environmentally responsible manner. The Arctic environment is exposed to negative influence more than the other regions, which is why it is important to preserve balance in

[105] Fauchald (2011).

its fragile ecosystem in order to avoid introduction of new species to the area to prevent adverse consequences.

The cruise operators are aware of potential risks of the accidents at sea, which may bring harm not only to the marine environment but together with that are able to create threats to passengers and crew of the ships. Thus, whether the existing laws and regulations are being followed by the cruise liners in Svalbard waters, the operational discharges from the cruise ships will have comparatively slight impact on the marine environment of the Norwegian Arctic.

3.3 Comparative analysis of the Arctic and Antarctic legislation pertaining to the environmental protection from the cruise vessels pollution

3.3.1 Introduction

This chapter is devoted to the comparative analysis of the cruise shipping in the Arctic and Antarctic. In the previous chapters the international and national Norwegian regulations of the marine environmental pollution in the Arctic were analysed. Consequently, in this one, an overview of the applicable corresponding legislation in the Antarctic will be given. And then, the differences and similarities of the legal regimes related to the protection of the marine environment from cruise ships pollution in both Polar regions will be analysed. Based on the example of the Antarctic Treaty System, the study to what extent this experience can be used for the perspective legal regime on the environmental protection from cruise vessel pollution in the Arctic will be provided.

3.3.2 Historical background

Looking at the development of the cruise ship tourism in the Arctic in historical perspective, it is argued that it takes its origins starting approximately from the 1800-s.[106] As Snyder noticed, "[d]uring the past two centuries numerous advances in transport technologies have contributed to the steady growth of Arctic tourism. At the present time, advanced ship technologies together with improved marine charts and navigational aids have allowed cruise ship travel to increase exponentially."[107] Whereas in the Antarctic it is a relatively recent activity began approximately in the middle of the XX century.[108] In the past decades the amount of cruise vessels navigating to both destinations the Arctic and Antarctic has increased considerably.[109]

3.3.3 Antarctic Treaty System

The Antarctic is regulated by the set of international agreements united in the Antarctic Treaty System (ATS). The Antarctic Treaty – the main legal instrument of the

[106] Barthelmess (2007), Snyder (2007).
[107] Snyder (2007) p.12.
[108] Luck (2010) p.xx.
[109] Molenaar (2005) p.247.

ATS – was signed on 1 December 1959 by the twelve States and entered into force in 1961.[110] Now there are 50 Parties to this Treaty.[111] The principal goal of the Treaty is to warrant that the Antarctic will remain to be used solely for peaceful purposes and for the benefit of all mankind.[112]

"The Antarctic Treaty area includes over 20 million square kilometres of the Southern Ocean, extending from the Antarctic coast to 60 degrees South latitude".[113] (Figure 4) The Antarctic Treaty defines the Antarctic as "the area south of 60 degrees South latitude, including all ice shelves…"[114] Moreover, this provision emphasizes that nothing in this Treaty shall be a prejudice to the exercise of the rights of any State on the high seas within that area according to the international law. Because "there is no sovereignty over Antarctica, there can be no territorial sea, and the high seas begin at the coast."[115]

Figure 4. The map of the Antarctic[116]

In 1991 a Madrid Protocol on Environmental Protection to the Antarctic Treaty was adopted. "The main purpose of the Protocol is to provide for the comprehensive protection

[110] The Antarctic Treaty.
[111] Secretariat of the Antarctic Treaty. The Antarctic Treaty. http://www.ats.aq/e/ats.htm. Viewed on 17.06.2012.
[112] The Antarctic Treaty.
[113] Secretariat of the Antarctic Treaty. Prevention of Marine Pollution. http://www.ats.aq/e/ep_marine.htm. Viewed on 28.06.2012.
[114] The Antarctic Treaty Art. VI.
[115] Myhre (1986) P.36.
[116] The University of Texas in Austin. Perry-Castañeda Library Map Collection. Polar Regions and Oceans Maps. http://www.lib.utexas.edu/maps/cia11/antarctica_sm_2011.gif Viewed on 28.06.2012.

of the Antarctic environment and dependent and associated ecosystems. The Protocol designates Antarctica as a natural reserve, devoted to peace and science; prohibits mineral resource activities other than scientific research; and sets principles and measures for the planning and conduct of all activities in the Antarctic Treaty area. Guidelines have been developed under this protocol to provide a framework for regulation of the potential negative impacts of tourism in the Antarctic. As tourist activities on the continent continue to grow the ATS is intensifying its focus on these issues".[117]

The Environment Protocol consists of six Annexes; the focus will be put on the two of them because they reflect the mandatory measures for the waste disposal management from, *inter alia* cruise ships, to prevent environmental pollution. Annex III points out that "the amount of waste produced or disposed of in the Antarctic Treaty area shall be reduced as far as practicable so as to minimize impacts on the Antarctic environment and to minimize interference with the natural values of Antarctica, with the scientific research and with other uses of Antarctica which are consistent with the Antarctic Treaty."[118] "This Annex identifies types of waste which have to be removed and establishes rules for the storage and disposal of waste."[119]

Annex IV is devoted to the prevention of marine pollution; it regulates the discharge of substances from ships, including oily mixtures, garbage and the disposal of ship-generated sewage. The Annex is consistent with the relevant annexes of MARPOL 73/78. It prohibits discharge of oil, noxious liquid substances and garbage together with the disposal at sea of any plastics in the Antarctic Treaty area.[120]

Concerning additional protective measures, in 1990 the Antarctic Treaty Consultative Meeting (ATCM) established the initiative, which was approved by the IMO, to include the Antarctic waters into the MARPOL 73/78 Special Areas. Becoming the Special Area, the Antarctic is entitled to be protected by distinctive mandatory measures for the prevention of sea pollution and entry to this area requires a special permit.

Further on, especially recognizing the rising possibilities of the fuel spill contingencies in the area of the Antarctic Treaty because of the navigational risks, e.g.

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[117] Snyder (2007) p.25.

[118] Annex III to the Protocol on Environmental Protection to the Antarctic Treaty. Waste Disposal and Waste Management. Art1(2). http://www.ats.aq/documents/recatt/Att010_e.pdf . Viewed on 25.06.2012.

[119] Secretariat of the Antarctic Treaty. Waste Disposal and Waste Management. http://www.ats.aq/e/ep_waste.htm. Viewed on the 25.06.2012.

[120] Annex IV to the Protocol on Environmental Protection to the Antarctic Treaty. Prevention of Marine Pollution. http://www.ats.aq/documents/recatt/Att011_e.pdf . Viewed on 25.06.2012.

icebergs and sea ice, and high environmental concern about the impacts of such incidents, in 2005 the 28th ATCM sent a request to IMO aiming to provide additional instruments in order to restrict the use of Heavy Fuel Oil in the Antarctic waters. One year later Practical Guidelines for Ballast Water Exchange in Antarctic waters was adopted by the IMO in addition to the IMO's Ballast Water Management Convention. These additional requirements for ballast water control must be followed unless the safety of the ship is jeopardised by a ballast exchange. Among the most prominent are that the ships should keep the record of the ballast water exchange and in case they have spent significant time in the Arctic they should undertake cleaning operations in their ballast tanks before they enter the Antarctic waters.[121]

The regulations, which protect the Antarctic environment from ship pollution, are stringent and constantly under development, especially important is that the growth of cruise vessels is taken into high consideration, providing better management aimed at the protection of the Antarctic marine environment.

3.3.4 Similarities and differences in the legal regimes of the Arctic and the Antarctic

Concerning general similarities between the Arctic and Antarctic: both are Polar regions characterized by the fragile environment, located in hardly accessible places, where extreme climatic conditions prevail. Both regions lately show strong growth in the ship-based tourism.

In relation to the legislation applicable to both regions, there are the Guidelines for Ships operating in Arctic and Antarctic Ice-Covered Waters approved by the IMO in 2009. However, they are not mandatory, which means that the problems of compliance and implementation still remain in place.

Apart from these basic assumptions, there are not many other common features, thus the analysis of the main differences follows.

Starting with the general descriptions, the Arctic has local population living there during many centuries, while Antarctic has no permanent residents, which leaves imprint

[121] Annex to Resolution 3 (2006). Practical Guidelines for Ballast Water Exchange in the Antarctic Treaty Area. http://www.ats.aq/documents/recatt/att345_e.pdf. Viewed on 27.06.2012.

on the importance of the protection of the environment as it can cause adverse effects on the people.

The Antarctic is a single continent, which is why the focus is laid on the land and there is no State sovereignty over the maritime zones, thus it is easier to maintain governance over it, which is regulated by the Antarctic Treaty System. In the Arctic the measures are to be determined within the set of national legal systems of the eight Arctic States spreading not only to the land but also to the maritime zones within national jurisdiction, which creates certain complications to establish a single comprehensive regime similar to the Antarctic.

There are no international legally-binding treaties, which would cover the entire Arctic – the Arctic legal regime is a series of "soft law" instruments. One of them is the Arctic Environmental Protection Strategy (AEPS), which was adopted in June 1991 by eight Arctic States. The main goal of the AEPS is to assess and protect the Arctic. Later on this Strategy was absorbed by the Arctic Council – the high-level intergovernmental forum aimed to solve numerous Artic issues, established in the 1996.

The Antarctic is the opposite and represents the system of well-developed treaties – the Antarctic Treaty System (ATS). Being managed under the Antarctic treaty system for peaceful and scientific purposes, all vessels entering Antarctic waters are required to obtain a permit beforehand. Thus, all the vessels, visited Antarctic, are registered in the International Association of Antarctica Tour Operators (IAATO). The total number of the operator visitors for 2010-2011 comprises 33,824.[122] The amount of cruise vessels as well as the environmental impacts of such activity is lower and put under control.

Due to the difficulties of defining the Arctic in general and non-existence of the united registration system of the cruise vessels operating there, it is complicated to obtain exact reliable data on the number of ship-based tourists. However the average figures are higher compared to the visitors of the Antarctic.

Concerning specific environmental protection regulations, the Antarctic is proclaimed as the MARPOL Special Area, which means that all types of pollution listed in the Annex I, II and V (except the food waste) are prohibited there due to its oceanographic and ecological conditions and sea traffic. The Arctic is not included in the Special Areas therefore the MARPOL regulations for the Special Areas are not applicable to it. Including

[122] IAATO (2011). http://iaato.org/ru/home. Viewed on 07.06.2012.

the Arctic to the list of Special Areas could have also been problematic at least because the consensus and joint submission to the IMO of such proposal of all eight Arctic States would have been necessary as the most part of the Arctic territory is located in the areas of national jurisdiction of these States.

Shipping in the Arctic and Antarctic is different due to the number of factors. First of all, geographically the Arctic is surrounded by the continents whereas the Antarctic is the continent itself surrounded by the ocean. The dissimilarities also pertain to the amount of multi-year ice in the regions: the Antarctic has considerably less ice-covered areas compared to the Arctic.

The regulation of the cruise vessel traffic in both regions is done by two separate organizations of cruise operators. The Association of Arctic Expedition Cruise Operators (AECO) "was founded in 2003 and is an international organisation for expedition cruise operators." [123] It developed guidelines for the organization of respectable, environmentally-friendly and safe expedition cruising in the Arctic.[124] The International Association of Antarctica Tour Operators (IAATO) was founded in 1991. "Recognizing the potential environmental impacts that such growing numbers of tourism could cause, seven private tour operators conducting excursions in Antarctica joined together … to practice and promote the highest possible standards of travel in this remote, wild and delicate region of the world".[125] The IAATO works in cooperation with the Antarctic Treaty Parties aiming to provide environmental awareness and protection. Both the cruise vessels operators and the tourists carry the responsibility for the preservation of the marine Arctic environment. However, the regulations taken by these organizations do not bear the legally-binding character.

Taking into high consideration the diverse impacts of the cruise-vessels navigation in the Arctic waters, in 1995 the World Wide Fund for Nature (WWF) Arctic Programme started developing the principles for the cruise-based tourism in the Arctic aimed at the environmental protection.[126]

"The Principles and Codes for Arctic Tourism were developed in cooperation between WWF Arctic Programme, tour operators, conservation organizations, managers, researchers, and representatives from indigenous communities during workshops held on

[123] AECO. http://www.aeco.no/.Viewed on 07.06.2012.
[124] Ibid.
[125] IAATO. http://iaato.org/ru/home. Viewed on 01.06.2012.
[126] Snyder (2007).

Svalbard in 1996 and 1997. The participants developed a List of Potential Benefits and Potential Problems of Arctic Tourism, Ten Principles for Arctic Tourism, a Code of Conduct for Tour Operators, and a Code of Conduct for Tourists."[127]

The compliance with these rules is voluntary, thus the level of effectiveness of such measures to protect the environment totally depends on the behaviour of cruise vessels operators. The absence of the legally-binding regulations gives the freedom, on which the environmental situation depends in the Artic marine areas.

3.3.5 Conclusion

Specific regulation of the cruise tourism in the Arctic is relatively limited compared to the Antarctic. There are voluntary guidelines, which were described in the previous chapter; however they bear merely recommendatory character. In the Antarctic on the contrary, all kinds of tourism activities are strictly planned and controlled, especially when they bring impact on the environment. Moreover, the waste disposal standards applied in the Antarctic to ship-based tourism are more stringent than in the Arctic.

Of course, the ATS is not completely perfect system and "[r]ecognizing that measures adopted within the framework of the ATS are only binding on parties to the relevant treaties, creative approaches to increasing membership in the ATS and to developing cooperative enforcement mechanisms will also need to be developed to ensure the universal application and efficacy of the measures adopted."[128] Nevertheless compared to the Arctic, the Antarctic legal environmental regime is more developed and the questions of pollution from the cruise tourist vessels are more adequately addressed by the legally binding instruments laid down in the ATS.

Despite the fact that there is a number of significant gaps in the international legislation with the purpose of protection of the Arctic marine environment from the increasing amount of cruise vessels, the Arctic States are introducing national measures in order to establish the regulation of the cruise-based tourism to protect the environment against pollution. One of such examples is the Norwegian legislation pertaining to the Arctic, particularly to Svalbard, – which was analysed in the preceding chapter of the thesis.

[127] Snyder (2007) p.38.
[128] Rayfuse (2007) p. 216.

4 Conclusions

This thesis provided the analysis of the possibilities of the coastal State in regulation of operational and accidental cruise ship pollution of the marine environment in the Arctic on the international level. Moreover, the environmental protective measures applicable to the cruise ships navigating in Svalbard maritime zones on the example of the national Norwegian legislation were studied. Along with that, the relevant legal regimes pertaining to the Arctic and Antarctic were compared and analysed.

The Arctic fragile marine environment is in need of careful protection, especially nowadays when the amount of cruise ships navigating in the Arctic waters is increasing every year creating high risks of operational and accidental pollution. However, the presence of cruise vessels might cause less severe impacts on the marine environment than, for instance, the activities of other ships such as fishing or research vessels, mostly because cruise liners do not interfere physically into the marine environment and they have to follow a set of certain environmental regulations and guidelines adopted specifically for the cruise vessels.

The major international legally binding regulation aimed at preventing the operational and accidental cruise vessel pollution that is currently applicable to the Arctic is the 1982 UN Convention on the Law of the Sea. This treaty establishes a unique universal regime for protection and preservation of the marine environment. It provides general obligations to all the States to protect and preserve the marine environment stipulated by the Articles 192 and 194. In relation to the coastal States jurisdiction possibilities towards the prevention of the marine pollution from the cruise vessels in the Arctic the LOSC has certain provisions, e.g. Articles 21, 211, etc., according to which the States are able to adopt laws and regulations to protect the marine environment in their maritime zones. Such laws and regulations, however, are to be implemented with the restrictions stipulated *inter alia* by the rights of innocent passage in the territorial sea and the freedom of navigation in the EEZ of the coastal State. Thus, the possibilities of the coastal States are relatively limited.

The leading role in provision of the maritime ship safety is put on the International Maritime Organization. The mandatory IMO instrument for the pollution prevention is the MARPOL 73/78 Convention. In addition, there are non-mandatory Polar and AECO Guidelines.

However, there is no single legally binding instrument for the protection of the marine environment in the Arctic unlike in the Antarctic.

The diversity of the legal regulations in the Arctic leaves the question open: is there a need in the Arctic for a comprehensive regime similar to the Antarctic? Being included in the MARPOL Special Areas, the Antarctic became protected from a great amount of dangerous waste discharges. However that option can hardly be made possible for the Arctic marine environmental protection strategy due to the restrictions in the Special Areas requirements.

The presence of cruise vessels in the Norwegian Arctic waters is inevitable and will continuously produce certain impact on the marine environment. Since the cruise tourism activity on Svalbard is a part of national Norwegian strategy for the future development, the key factor is to maintain it in the best possible environmentally responsible manner. The diverse array of the national Norwegian laws and regulations made for the purpose of the marine environmental protection of Svalbard from the cruise vessels embody the completion of the mandatory and voluntary instruments to the international legislation.

On the one hand, the cruise operators are aware of the stringent environmental regulations in the Arctic marine zones and follow them, moreover, they adopt their own guidelines that sometimes bear stricter character than the existing laws, on the other hand, the reinforcement of the restrictions on cruise vessel traffic may possibly lead to an escalation of unregulated tourism, which can cause worse effect. Therefore, the most important is to provide balance in international and national legislation, which will facilitate the protection of the environment.

Depending on the State’s national policy and legislation the environmental protection regime for the Arctic maritime zones can be adequate, as for example in case of Norway. Generally talking about the international legislation it is not always easy to monitor the compliance from the flag States due to the fact that vessels navigating in the Arctic may be flagged in States, which are not party to the relevant international conventions.

Relating to the question whether the current legal framework is adequate to deal with the current acute issues of the marine environmental pollution, the matter of implementation, enforcement and compliance by vessels has always been difficult, even when the regulations and laws provided stringent measures. Consequently, it is very important to improve the present situation.

In conclusion, the suggestions on the measures for the potential ways of reducing pollution to the marine environment in terms of future growing interest to the Arctic cruise-vessel tourism are presented.

In order to improve the existing legal regime in the Arctic in relation to the protection of the marine environment from pollution produced by the cruise vessels it is necessary to pay special attention to the implementation and enforcement of the relevant legislation. For instance, to take measures ensuring that cruise vessels do not violate environmental laws. This can be achieved by improving monitoring of cruise vessels navigational activities and provision of regular inspections in order to assess how the waste generated on board is treated.

Relating to the increasing marine traffic in the Arctic, it can be relevant to inspect the current availability of the traffic patterns in this marine area, that way to find out the challenging and prospective routes for the future safe navigation. Along with that, it is important to provide new technologies which would prevent the cruise ships from accidents minimizing the risk of marine pollution.

Concerning the discharges from cruise vessels, it is vital to reduce and regulate them. For instance, regarding the ballast water taken by ships in the different marine areas, the ship equipment should allow to treat this water in order to avoid the introduction of new alien species to the Arctic ecosystem. Thus, the future cruise vessels shall be constructed either the way to be able to accommodate considerable amount of waste in order not to discharge it at sea or the way that the discharges are treated on board which will protect the marine environment.

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