Norway and Arctic Marine Shipping

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Report: Norway and Arctic Marine Shipping
Fram Centre High North Research Centre for Climate and the Environment,
Flagship research programme: Sea ice in the Arctic Ocean, technology and agreements

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The Fram Centre is the short name for FRAM - High North Research Centre for Climate and the Environment. The Fram Centre is based in Tromsø, and consists of scientists from 21 institutions involved in interdisciplinary research and outreach in the fields of natural science, technology and social sciences.
1. Introduction

1.1 Research questions

The Arctic is particularly affected by climate change with higher temperatures. One of the consequences of the rise in temperatures is the decrease in sea ice both in extent and in thickness. This will have regional and global impacts, on climate and the marine species and ecosystems. In this study the focus will be on the opportunities provided by the decrease of sea ice through increased access to previously closed areas for exploitation of natural resources (living and non-living) and shipping (tourism, transport and military activities).

The maritime activities in the Arctic may become more extensive in the future. Projections that the two trans-Arctic sea routes (Northwest Passage and Northern Sea Route) would be navigable for a longer period of the year at the end of the century has been revised. The Arctic Oceans and adjacent seas will not be completely without sea ice as there still will be sea ice during winter season and its extension may vary. Together with other factors such as a harsh climate, lack of infrastructure and a particular vulnerable nature there will be risks linked to future maritime Arctic shipping. The overall question to be addressed in this paper is what legal opportunities Norway has as a coastal State and a port State to promote the safety of and environmental protection in (international) Arctic marine shipping. The evaluation includes both the measures Norway may take unilaterally under international law and the measures that must be based in multilateral instruments such as those adopted through the International Maritime Organization. The role as port State will be highlighted, as this probably will be the most realistic way Norway may influence Arctic shipping. The study will not include any assessment of whether these opportunities in fact are employed by Norway. This will be the focus of a separate report to follow.

2 Ibid. Key finding #6
1.2 Background

In 2009, a report on the status and prospect of Arctic marine shipping (Arctic Marine shipping Assessment or short AMSA) was submitted to the Arctic Council. 3

The main findings of the report are that the melting of the sea ice will provide access to larger areas for a longer period of the year than previously estimated. The main driver of increased maritime activities will be the exploitation of the natural resources of the region. As there are, many uncertainties related to Arctic shipping the AMSA finds it most likely that the shipping in the region will be destinational and not trans-Arctic. Pollution following accidents and illegal discharges will be the main threat to the Arctic marine environment. Further, the law of the sea provides the legal framework for regulating Arctic shipping, IMO has not adopted any binding regulations particularly for Arctic shipping. The AMSA recommends that should be binding regulations of Arctic shipping, based on the existing IMO Conventions and that there be uniformity between the regulations adopted by the Arctic coastal States and through the IMO.

The 2009 Ministerial Meeting of the Arctic Council approved the AMSA report and its recommendations.4

It identified the IMO as forum for cooperation on development relevant measures to reduce the environmental impacts of shipping in Arctic waters. IMO was inter alia asked to update the Guidelines for Ships Operating in Arctic Ice- Covered Waters, make the application of its relevant parts be made mandatory.

From Norwegian perspectives the increased Arctic maritime activities provides opportunities as well as challenges. Opportunities as Norwegian shipping and other types of industries may benefit. As there is a lack of infrastructure in the Arctic, ports in Norway may become important for Arctic shipping. Increased maritime activities are also challenging, as it will mean increased risk to Norwegian environment through direct or indirect sources.

1.3 Concepts and delimitations

The Maritime Arctic: There is no legal definition of the maritime Arctic. In this report, the definition used in the IMO Polar Shipping Guidelines as revised in 2010 is used. It includes the Arctic Ocean and its adjacent seas, waters off Svalbard and the northern parts of the Barents Sea. The definition does not exclude the assessment of measures by Norway as a port State or coastal to regulate international shipping in these waters.

Coastal State and Port State: The paper concerns control of in respect of foreign flagged vessels while in Norwegian ports and navigating through maritime zones and focuses on the roles of coastal States and port States. The port State concept in this paper is used on exercise of jurisdiction in respect of regulations applicable in areas beyond Norwegian jurisdiction. It will not deal with Norway as a flag state. Norwegian flagged vessels are subjected to Norwegian flag state jurisdiction applicable both within and beyond Norwegian territorial jurisdiction. Norway is not likely to set stricter or more lenient requirements for Norwegian vessels than foreign-flagged vessels.

Delimitations: The research questions identified in section 1.1 indicate the scope of the paper. However, this paper will not deal legal issues relating to shipping and petroleum exploitation (e.g. transfer of oil), dumping from vessels, to fisheries nor liability following a maritime casualty. The report will neither include what is defined as maritime security.

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4 Tromsø Declaration on the Occasion of the Sixth Ministerial Meeting of the Arctic Council, 29 April 2009, Tromsø, Norway http://arctic-council.org/filearchive/Tromsoe%20Declaration-1..pdf
1.4 Overview

The report consists of seven chapters in addition to the introduction:

Chapter 2 Maritime zones provides an overview of the maritime zones of Norway. In the next chapter, chapter 3 International regulation of shipping the role of IMO and its conventions are addressed. Chapter 4 Norway as a Port State focuses on the measures Norway has taken and may take to regulate shipping in its maritime zone to ensure maritime safety and environmental protection. Chapter 5 Norway as a Coastal State looks into the same question from the coastal State perspective. In the next Chapter 6: Practice of other Arctic Coastal States the regulations of Canada and Russia as port and coastal States will be assess before we in chapter 7 evaluate the possible future legal regimes for the Arctic shipping and conclude in chapter 8.
Maritime zones and Norway

2.1 General

The 1982 UN Convention on the Law of the Sea (LOS Convention) is the primary legal regime for the different uses and activities in the seas and oceans. With the exception of the United States of America, the Arctic coastal States are parties to the LOS Convention. Many of the rights and obligations set out in the LOS Convention are codifying customary international law and are therefore legally binding to all states. The LOS Convention includes general obligations to protect the marine environment in Part XII in addition to jurisdictional rules where the rights and duties are allocated within different maritime zones on the basis of a balance of interests between the coastal States, port States and flag States. The most important maritime zones for the Arctic region are internal waters, territorial sea, exclusive economic zone, continental shelf, high seas and the Area.

Chapters 4 and 5 present and assess the jurisdiction of Norway as a port State and as a coastal State to regulate and enforce shipping in the different maritime zones. The aim of this section is to provide an overview of the different maritime zones and of the jurisdiction to regulate and enforce shipping within them, as a basis for the further discussions.

Norway enjoys full sovereignty over the Svalbard Archipelago, according to the Svalbard Treaty Article 1. The maritime zones of Svalbard are therefore also included in this overview. Moreover, the LOS Convention includes a particular provision, Article 234, which provides enhanced jurisdiction over ice-covered areas. Article 234 and ice covered areas is therefore included in this section as a particular kind of maritime zone.

2.2 Internal waters and territorial sea

The coastal States have sovereignty within the internal waters and the territorial sea. It follows from LOS Convention Article 2 that the sovereignty of coastal State extends, beyond its lands territory and internal waters to an adjacent belt of the sea described as the territorial sea.

The breadth of the territorial sea is 12 nautical miles from the baselines.

The internal waters include as expressed in the LOS Convention Article 8, waters on the landward side of the baselines. The internal waters comprise ports, harbours, bays and historically recognized bays and historic waters.

Within the internal waters, the coastal State enjoys full sovereignty and may regulate and enforce shipping as it wishes. Consequently, the coastal State may for instance deny an environmental risky vessel to enter the internal water or deny access to its ports. The normal baseline, where the breadth of the territorial sea is measured from, is as provided for in Article 5 the low-water line along the coast. A right to draw straight baselines was recognized by the ICJ Anglo Norwegian Fisheries case and is now recognized in the LOS Convention.

The method for drawing straight baselines is set out in the LOS Convention Article 7. Norway has proclaimed straight baselines along its Arctic coast.

An important restriction on the sovereignty of the coastal sea within the territorial sea is the right of innocent passage. All states enjoy as recognized in LOS Convention Article 17 the right of innocent passage. The concept

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9 LOS Convention, Article 2.
of innocent passage is defined in the LOS Convention Articles 18 and 19. First, the passage must according to Article 18 (2) be «continuous and expeditious». It follows however, from Article 18 (2) that passage includes stopping and anchoring when this is part of the ordinary navigation or necessary by force majeure or distress. Moreover, the passage must be «innocent». As set forth in Article 19 (1), the passage is when «prejudicial to the peace, good order or security» if the coastal State not innocent. This principle is elaborated in Article 19 (2) (a) to (l) where it is defined situations where the passage is not innocent, such as if the vessel engages in any act of «wilful and serious pollution» or «any fishing activities» etc.

As the coastal State enjoys sovereignty in the territorial sea, it also has some prescriptive and enforcement jurisdiction over vessels in innocent passage. The prescriptive jurisdiction of the coastal State is set out in the LOS Convention Articles 21, 22 and 211 (4). Due to Article 21, the coastal State may adopt laws and regulations relating to the innocent passage in respect of eight different purposes such as for the safety of the navigation and for the protection and preservation of the environment. There is however, an important exemption from the prescriptive jurisdiction in Article 21 (2). When it comes to CDEM standards, which includes standards that relate to the construction, design, equipment and management of vessels, the coastal State may only adopt regulations which «…are giving effect to generally accepted international rules and standards» (abbreviated GAILRAS).

Article 22 provides the coastal State with prescriptive jurisdiction to adopt sea-lanes and traffic separation schemes. These laws and regulations must according to Article 24 (1) not hamper the innocent passage. This is further elaborated in Article 24 (1) a) where it is established that the coastal State may not «…impose requirements on foreign ships which have the practical effect of denying or impairing the right of innocent passage».

The objective of Article 24 is to balance the interests of the flag states and of the coastal States. The evaluation whether a regulation would hamper the innocent passage must be carried out on the basis of these relevant interests. The burdens on the rights of innocent passage, whether the passage for instance becomes unpractical or more expensive must be balanced against the interests and the necessity of the coastal State to adopt a particular regulation. The need and interests of the coastal State to protect the particular sensitive marine environment of the Arctic are relevant considerations in this evaluation.

The right of innocent passage is not a static right, but evolves in the same way as any other legal principle. Both the definition of the term «innocent passage» provided in Articles 18 and 19, the scope of the prescriptive jurisdiction in Articles 21 and 22 and the principle in Article 24 (1) must be interpreted in the light of newer circumstances and in the light newer environmental principles and obligations. Circumstances like the prospects of increased shipping activities in the Arctic, the particular sensitive marine environment, the harsh weather conditions etc. and also the obligations of the coastal State to protect the marine biodiversity are relevant arguments for what kind of regulations which are acceptable and may be adopted without infringing upon the right of innocent passage.

As for vessels that are not in innocent passage, the coastal State may prescribe any regulation and make it applicable for foreign vessels that are not in innocent passage. Whereas the coastal State enjoys full and exclusive sovereignty, over vessels in non-innocent passage it is important to determine whether the passage is innocent or not, as this is decisive for what regime applicable to the vessel.

In addition, the enforcement jurisdiction is different for vessels in innocent and vessels in non-innocent passage. The enforcement jurisdiction over vessels in non-innocent passage follows from Article 25. With regard to the enforcement jurisdiction over vessels in innocent passage, the LOS Convention makes a distinction between enforcement by the coastal State of regulations on prevention or reduction of pollution, which is regulated in detail by Article 220 (2), and of other rules. As for the enforcement jurisdiction over other rules, the obligation not to hamper the right of innocent passage in Article 24 applies. Moreover, Articles 27 and 28 includes relevant provisions on civil and criminal enforcement jurisdiction.

2.3 Exclusive Economic Zone

The right to establish an Exclusive Economic Zone (EEZ) is accepted as part of general international law. An EEZ as established in Article 57 extend to 200 nautical miles. It follows from Article 55 that the EEZ is an area «…beyond and adjacent to the territorial sea, subject to the specific legal regime established in this, Part, under which the rights and jurisdiction and freedoms of other States are governed by the relevant provisions».

The rights and duties of the states are allocated based on the interests of the coastal State to control and protect their close areas and resources and the rights of other states. The EEZ is a particular functional maritime zone with a sui generis character; located between the high seas and the territorial sea.17

12 The coastal State jurisdiction with regard to CDEM standards is examined in section 5.2.2.
13 The concept of GAILRAS is described further in section 5.2.2.2.
17 About the sui generis character of the EEZ see R.R. Churchill
According to Article 56 (1) (a) the coastal States enjoy «...sovereign rights for the purpose of exploring and exploiting, conserving and managing natural resources». Furthermore, it follows from Article 56 (1) (b) (iii) that the coastal States enjoy jurisdiction with regard to the marine environment «...as provided for in the relevant provisions of this Convention». The provisions referred to here are the provisions in Part XII of the Convention.18 Due to the jurisdiction over the marine environment, the coastal State may therefore adopt regulations on dumping, vessel source pollution and pollution from seabed activities as provided for in Part XII. When exercising their rights and jurisdiction it follows from Article 56 (2) that the coastal State shall have due regard to the rights and duties of other states. It follows from Article 58 (1) that other states enjoy the freedoms of navigation, over flight and the laying of submarine cables and pipelines.

With regard to shipping, the starting point is that other states enjoy freedom of navigation. The flag state is responsible to adopt regulations and to enforce violations of such regulations that take place in the EEZ of other states. The freedom of navigation is not absolute. It follows from Article 56 (1) that other states enjoy the freedoms of the high sea referred to in Article 87, «subject to the relevant provisions» of the LOSC Convention. This suggests that the freedom of navigation is subject to the relevant provisions. The provisions that provide jurisdiction over vessel source pollution, over flight and the laying of submarine cables and pipelines.

Moreover, according to Article 58 (3) other states shall exercise their rights and perform their duties with due regard to the rights and duties of the coastal State. In addition, the coastal States however, shall, as set out in Article 56 (3) exercise their rights and perform their duties with due regard to the rights and duties of other states. There is thus a corresponding duty to have due regard to the rights and duties of other states and of the coastal States, respectively.

However, as the coastal State enjoys jurisdiction over the marine environment it is competent to regulate and enforce with regard to vessel source pollution. It follows from Article 211 (5) that the coastal State may «...adopt laws and regulations for the prevention, reduction and control of pollution from vessels conforming to and giving effect to generally accepted international rules and standards established through the competent international organization».

Article 211(5) allows the coastal State to regulate navigation within the EEZ for the purpose of vessel source pollution. However, the legal competence is limited with regard to what kind of regulations that may be adopted. The coastal State may only adopt international rules and standards that are «generally accepted» and established by the «the competent international organization», hereby the International Maritime Organization (IMO). The jurisdiction of the coastal State to adopt any regulation on foreign shipping to protect the environment against pollution in the EEZ, is therefore limited to regulations that «...are conforming to and giving effect to»...[GAIRAS]. A significant consequence of the reference to GAIRAS in Article 211(5) is that regulations that qualify as GAIRAS are legally binding upon the foreign vessel, also if the flag state is not a party to the instrument where the particular regulation is adopted.20 As the jurisdiction of the coastal State is limited to adopt regulations that qualify as GAIRAS, it is significant to define the concept of GAIRAS to determine the scope of the coastal State jurisdiction to adopt regulations on shipping in the EEZ. The concept of GAIRAS is not defined in the LOSC.21 The key question when determining whether a rule or a regulation qualify as GAIRAS, is when the rule or standard is «generally accepted». The concept of GAIRAS and the question when an international regulation has this status is discussed below in section 5.2.2.

Within certain special areas, and due to particular conditions, the coastal State is moreover, provided with enhanced jurisdiction in Article 211 (6) to adopt regulations that go beyond GAIRAS. This provision is examined further in section 5.4.3.

The enforcement jurisdiction of the coastal State in the EEZ is limited. Although the coastal State has some prescriptive jurisdiction to adopt regulations that qualify as GAIRAS, the enforcement of the regulations is according to Article 220 in the LOS Convention essentially limited to situations where a violation has already been committed.22

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10 See R.R. Churchill and A.V. Lowe, supra note 7, p. 47.
18 Ibid, p.264.
19 Ibid, p.264.
20 About the relationship between IMO and LOSC and about the rules of reference see section 3.2.
2.4 Ice-covered areas – Article 234

Article 234 provides the coastal States with additional jurisdiction to adopt and enforce environmental regulations within ice-covered areas. The reasoning for the enhanced jurisdiction is the acknowledgement of ice-covered areas as areas that are particularly vulnerable to vessel-source pollution.\(^{23}\) The broad coastal State jurisdiction is, however, subject to certain restrictions and limited with regard to the purpose of legislation.\(^{24}\) It follows from Article 234 that the coastal State may adopt laws and regulations for the purpose of «…prevention, reduction and control of marine pollution». Moreover, the coastal State may only adopt «non-discriminatory» laws and regulations.

The additional jurisdiction of the coastal State is also confined to certain conditions. There have to be «… ice covered areas within the limits of the exclusive economic zone» where «…particular severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation». Moreover, it is a condition that «…pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance».

To answer whether this provision is applicable within Norwegian Arctic waters it is necessary to examine the territorial scope of Article 234 and the temporal scope of the Article.\(^{25}\) Due to the wording «…within the limits of the exclusive economic zone…» the geographical application of the provision is unclear. The wording may be interpreted to mean that Article 234 applies solely within the limits of the EEZ, hereby within the 188 nautical miles beyond the limit of the territorial sea and within the limit of the EEZ. Alternatively, the wording may be understood so that the provision is applicable to all maritime zones located within the 200 nautical mile limit of the EEZ.

With regard to the temporal application of Article 234, there are two possible interpretations of the provision. One way of understanding Article 234, is that the provision provides for jurisdiction to regulate shipping within ice-covered areas only when the climatic conditions and the presence of ice create obstructions or hazards to navigation. Another possible interpretation is that the provision also allows exercise of this jurisdiction in the period of the year when an ice-covered area is ice-free.

The applicability of Article 234 within the Norwegian Arctic waters and to what extent the provision provides a legal basis to adopt stricter regulations to protect ice-covered areas in this region is examined below in section 5.3.4.


25 See Kristin Bartenstein, (2011) supra note 23, p. 28-31 where she discusses the territorial and temporal scope of Article 234.

2.5 The maritime zones of Svalbard

As Norway enjoys «…full and absolute sovereignty» over the archipelago under Article 1 of the Svalbard Treaty it is entitled to maritime zones under the law of the sea. Islands are treated equally with land territory and may generate EEZs as well as continental shelf.\(^{26}\) Any restrictions on rights to maritime zones must follow from the Svalbard Treaty. It has been argued that the use of ‘territorial waters’ in several of its provisions must be construed as such restriction as the concept arguably is special to Svalbard.\(^{27}\) Norway is not entitled to maritime zones beyond, which will be high seas. It is difficult to read ‘territorial waters’ as a restriction on the sovereignty of Norway. The concept is not special to Svalbard but was commonly used as a description of internal waters and territorial sea in international law until the adoption of the 1958 UN Convention on Territorial Sea and Con-

Norway enjoys sovereignty over Svalbard.
Source: Colourbox

26 LOS Convention, Article 121(2).


29 Agreement between the Government of the Kingdom of Norway on the one hand, and the Government of the Kingdom of Denmark together with the Home Rule Government of Greenland on the other hand, concerning the delimitation of the continental shelf and the fisheries zones in the area between Greenland and Svalbard, Copenhagen, 20 February 2006 (entry into force: 2 June 2006, United Nations Treaty Series, vol. 2378, reg.no.42887.

these agreements, both neighbouring coastal States have accepted that Svalbard generates maritime zones. There neither were any protests to the submission of Norway on the outer limits of its continental shelf suggesting that the archipelago do not generate maritime zones. There have been more controversies about the possible application of Svalbard treaty provisions to the maritime zones beyond the territorial sea. While Norway argues that, the treaty is not applicable beyond 12 nautical miles territorial sea other Contracting Parties are of the opposite opinion. Its application will have implications for the exercise of sovereignty and sovereign rights within these zones. In relation to shipping the relevant rights of the Contracting Parties include «…equally rights of fishing and hunting» under Article 2 and rights under Article 3 to «equal liberty of access and entry for any reason […] to ports» and to «carry out all maritime, industrial, mining and commercial operations on a footing of absolute equality». These rights mirror an obligation on Norway not to exercise jurisdiction in a manner that in effect involves direct or indirect discrimination based on nationality.

The right of non-discrimination does not mean that nationals of Contracting Parties must be treated identically. Discrimination based on objective grounds will be not contrary to the Svalbard Treaty: Like cases are treated equally and different cases differently. In general, protection of the environment and ensuring maritime safety are regarded as such objective grounds. These rights do not have a substantial character: Nationals of Contracting Parties do not have an (absolute) right to access Svalbard, to exploit the natural resources in its maritime zones or to exercise other maritime activities. Norway is competent to adopt measures restricting or even to banning such activity inter alia to protect the marine environment. Such restrictions must be equally applied to nationals of all Contracting Parties. Norway is restricted from applying different CDEM standards to vessels from the different Contracting Parties (including its own vessels) when accessing ports on Svalbard or operating in maritime zones where the Svalbard Treaty is applicable. However, such obligations follow from the LOS Convention as well (e.g. Article 227).

34 Ibid, p. 555.
35 However, as pointed out by Ulfstein, 1995, at p. 267-271 and 473 that the principle of good faith imply that Norway may not put illegitimate restrictions on access to Svalbard and performance of the rights of non-discrimination under Articles 2 and 3.
3. International regulation of shipping

3.1 General

Shipping in Arctic waters as in other waters is subjected to international regulations, predominantly those adopted through the International Maritime Organization (IMO). The objective of this chapter is to study the role of IMO but other relevant international bodies in developing and supporting the development of norms regulating shipping relevant for the Arctic. First, there will be a presentation of IMO and particularly its link to the law of the sea (section 3.2) followed in section 3.3 by an overview of the most relevant instruments (legal and non-legal) adopted through the organization and the International Labour Organisation (ILO). The role of other relevant bodies like the Arctic Council, Paris Memorandum of Understanding on Port State Control and the European Union will be addressed in section 3.4 before summing up in section 3.5.

3.2 International Maritime Organization

The International Maritime Organization (IMO) is the main responsible body for the regulation of shipping. The International Maritime Organization has at present 169 member States, including the states with a coastline towards the Arctic waters. Its purpose is to provide machinery for cooperation among Governments in the field of governmental regulation and practices relating to technical matters of all kinds affecting shipping engaged in international trade; to encourage and facilitate the general adoption of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and prevention and control of marine pollution from ships.

Prevention of marine pollution was formally included in the objective of IMO through the 1975 amendments of its constituent treaty. IMO shall provide for the development of conventions and other instruments for this purpose. The organization consists of several bodies including the Assembly, the Council, the Maritime Safety Committee (MSC), the Marine Environmental Protection Committee (MEPC) and the Legal Committee. All member States are represented in the Assembly and the committees of IMO. The Assembly is the highest governing body meeting every two years inter alia to elect the Council and to adopt the work program of the organization. It is also competent to convene international conferences to consider new or amendments to conventions and to adopt recommendations for the member States to implement guidelines. The Council is the executive body, consisting of 40 of the member States.

The technical bodies, MSC and MEPC are charged with the two main purposes of the organization: maritime safety and environmental protection respectively. The MSC is competent to deal with any matter concerned with «... aids to navigation, construction and equipment of vessels, manning from a safety standpoint, rules for the prevention of collisions, handling of dangerous cargoes, maritime safety procedures and requirements, [...] salvage and rescue, and any other matters directly affecting maritime safety.» The MEPC is responsible for issues relating to prevention and control of marine pollution from ships, particularly to adoption and amendment of regulations or other provisions. Several sub-committees are established under the MSC and MEPC. They include Safety of Navigation (NAV) and Ship Design and Equipment (DE).

Over fifty conventions and protocols have been adopted through the IMO. The conventions provide for simplified procedures for the adoption and enter into force of technical regulations through the so-called tacit acceptance procedure. For new conventions or amendments of existing to enter into force the acceptance of a larger number of the member States as well as a portion of the relevant tonnage is usually required. The purpose is to ensure their wide and uniform application when they enter into force. It gives the major maritime states with larger influence than other member States. The IMO also adopts non-binding instruments in the format of codes, guidelines and recommendations. The legislative process often starts by the adoption of guidelines, which is later incorporated into the relevant convention.

There are obviously overlaps between the IMO conventions and the LOS Convention. Several measures are taken to ensure compatibility between them. It is accepted that states parties may undertake obligations to protect and preserve the marine environment under IMO Conventions not consistent with its explicit provisions as long as they are consistent with the general principles of the LOS Convention, Article 237. On the other hand, IMO Conventions such as MARPOL 73/78 include provisions explicitly stipulating that they are not intended to prejudice the jurisdiction of states under the law of the sea.

The LOS Convention has only one explicit reference to
IMO. However, where there is a reference to 'competent international organisation' in provisions on shipping it is in fact a reference to IMO.\textsuperscript{49}

One example is Article 22(2) where the coastal State is obligated to take into account recommendation of such organization in the prescription of traffic separation schemes. Further, confirming the role of the LOS Convention as a framework convention, the rights and obligations of states parties in regulating international shipping are frequently linked to «generally accepted international rules and standards» adopted through the competent international organization. Such rules of references are found in Articles 21(2) and 211(2) charging flag states with obligations and restricting the jurisdiction of the coastal State. The specific content of the GAIRAS concept will be dealt with later. Nevertheless, it means that the regulations adopted through IMO Conventions with a certain adherence may be implemented through the system of jurisdiction stipulated in the LOS Convention. The addressees of the obligations of the IMO Conventions are mainly the flag states while the port State has been accorded some corrective function. The role of the coastal State in regulating international shipping is stipulated in the LOS Convention where the reference to the rules and standards of IMO delineate its competence. The jurisdiction of the port State may be wider than indicated by the IMO Convention. Questions on port State jurisdiction will be addressed in chapter 5.


3.3 IMO and ILO Instruments

3.3.1 General

In the following, an overview of the most important IMO and ILO instruments will be presented. They mainly consist of conventions under which technical and operational measures are adopted. However, there will be a special focus on non-binding instruments relating to shipping in the Arctic (section 3.3.5).

In the presentation there will be made a distinction – based on the categories of IMO, between: maritime safety instruments (section 3.3.2) and instruments aimed at preventing pollution of and protecting the marine environment (section 3.3.3). The distinction is not clear-cut as will be documented. The LOS Convention include references to «design, construction, manning or equipment of foreign ships» when defining the limits of the coastal State jurisdiction in the territorial sea, Article 22(2). The concept is known by its acronym CDEM rules and standards. IMO has also been instrumental in developing legal instruments on how to deal with maritime distress and casualties, such as the 1969 Intervention Convention. These instruments will be addressed in section 5.6.2 as they primarily are directed at and implemented by the individual states. The ILO instruments will be presented in section 3.3.4.

Source: Colourbox
3.3.1. Maritime Safety

SOLAS 74\textsuperscript{50} The objective is to specify minimum standards for the construction, equipment and operation of ships, which is compatible with their safety. It consists of eleven chapters in addition to a general chapter.

Chapters II-IV include rules and standards on construction, design and equipment. Under chapter II-1 on Construction - Subdivision and Stability, Machinery and Electrical Installations passenger vessels are required to be sub-divisioned into watertight compartments to keep the vessel afloat after damage. In 2010, the chapter was amended to include “goal-based standards” for oil tankers and bulk carriers.\textsuperscript{51} New ships are to be designed and constructed for a specified design life and to be safe and environmentally friendly, in intact and specified damage conditions, throughout their life. New vessels are to be designed and constructed to be safe and environmentally friendly when operating in “specified operating and environmental conditions” throughout its life.\textsuperscript{52} Vessels shall be constructed and designed to operate within specific areas. To be safe and environmentally friendly, ships should have adequate strength, integrity and stability to minimize the risk of loss of the ship or pollution to the marine environment due to structural failure, including collapse, resulting in flooding or loss of watertight integrity. These detailed requirements on how to achieve these objectives are to be developed by recognized classification societies. Thus, vessels built to operate in Arctic waters and even in ice-covered waters necessarily have to satisfy other construction and design requirements than vessels operating in the North Sea.

Chapters II and III regulate fire protection, fire detection and fire extinction, life-saving appliances and arrangements. Chapter IV concerns radio communication requiring vessels over 300 tons in international shipping to carry equipment designed to improve the chances of following an accident. They are to have electronic equipment for location of the ship or survival craft. Further, state parties to SOLAS 74 shall provide radio communication services as well as obliging vessels flying their flags to carry radio communications equipment.

Chapter V on navigation also involves operational requirements.\textsuperscript{53} The requirements are formatted as regulations. The few specific Arctic regulations of SOLAS are found here.\textsuperscript{54}

Under the first regulations, the Contracting Parties are required to provide navigational safety services, including aid to navigation. They are thus directed both at flag States and coastal States. It includes obligations to provide vessels with navigational warnings and meteorological services. The contracting parties are to cooperate on weather warning and to provide regularly forecasts. These services are to be undertaken by national meteorological services best capable to serve the relevant coastal and high seas areas. It would mean that the Norwegian meteorological services are responsible for certain areas of the Arctic. IMO and IHO (International Hydrographic Organization) have expanded the IMO/IHO World-Wide Navigational Warning Service (WWNWS) with five new NAVAREAS to include Arctic.\textsuperscript{55} Norway is responsible for NAVAREA XXIX operational from June 2011.\textsuperscript{56}

SOLAS chapter V also regulates search and rescue requiring the Contracting parties to provide for adequate arrangement for communication and coordination in their area of responsibility: search and rescue facilities as practical and necessary, taking into account the density of traffic. Although a separate obligation, this obligation is to be supplemented by the SAR Convention to be addressed below. Further, the Contracting Parties are to provide hydrographical services, the collection and dissemination and updating of e.g. nautical charts. Contracting parties are obligated to provide ice patrol service in the North (west) Atlantic in areas with icebergs (regulation). Vessels are required to communicate information on dangers to navigation (e.g. icing) to vessels in their vicinity. SOLAS Regulation V/10 provides for establishing ship routing systems. Contracting Parties may apply for mandatory ship routing systems in international straits, their EEZ and/or on the high seas. They are competent under the Law of the Sea to establish such schemes for their own territorial sea but are required to take into account the recommendations of the IMO, LOS Convention Article 22. The routing systems may include traffic separation schemes, two-way routes, recommended tracks, deep water routes, precautionary area and areas to be avoided (for reasons of exceptional danger or especially sensitive ecological and environmental factors). IMO has adopted

\begin{itemize}
\item Adoption of Amendments to the International Convention for the Safety of Life at Sea, 1974, as Amended.
\item Heike Deggim, «International Requirements for Ships Operating in Polar Waters», in Papers and Articles by IMO Staff available at http://www.imo.org/KnowledgeCentre/PapersAndArticlesByIMOStaff/Documents/International%20requirements%20for%20ships%20operating%20in%20polar%20waters%20-%20H.%20Deggim.pdf
\item See general IMO Resolution A.706(17) WORLD-WIDE NAVIGATIONAL WARNING SERVICE On the expansion to the Arctic see Expansion of World-Wide Navigational Warning System into Arctic waters marked by IMO, WMO and IHO chiefs, available at http://www.imo.org/MediaCentre/PressBriefings/Pages/11-arctic.aspx
\item See information on webpages of the Norwegian Coastal Administration, http://www.navarea-six.no/.
\end{itemize}
rules specifying the types of measures to be adopted under
the regulations and guidelines setting out the procedures
for establishing the routing systems.\(^5^7\) Closely linked is
ship reporting systems and vessel traffic services (SOLAS
Regulation V/11 and V/12).

Under SOLAS Regulation V/14 on manning, vessels are
required to be sufficient and efficiently manned. The crew
shall have a common working language.

SOLAS Chapter V also involves requirements on naviga-
tional system and equipment. In addition to magnetic
compasses, relevant nautical charts, the vessels are required
to have a system that establishes and updates their posi-
tion, echo sounding device and plotting device.\(^5^8\) Further,
vessels above 300 tons shall have installed automatic
identification system (AIS), providing land stations, other
vessels and aircraft information on their identity, position,
course, speed as well as receiving information from other
vessels. The purpose is to prevent collisions and enabling
maritime safety authorities to control the traffic. The
system may also be used to transmit messages to vessels
(Aids-to- Navigation). The AIS system has a limited
range, around 40 nautical miles from the land base station
according to the Norwegian Coastal Administration.\(^5^9\) The
AIS coverage has not been fully developed on Svalbard.
Therefore, vessels of 24 meters or more are required to
report their position at regular intervals when navigating
in the territorial waters of Svalbard.\(^6^0\) The AIS may also be
communicated via satellite, including larger areas. A satel-
lite launched in 2010 will provide the Vardø VTS station
overview of maritime traffic in Norwegian waters.\(^6^1\)

SOLAS chapter V has been amended to provide for a
more comprehensive and globally scoped surveillance of
maritime traffic through Regulation V/19-1 on Long-
Range identification and tracking of vessels (LRIT). The
purpose is to enhance security by providing information
on identity and location in sufficient time for the state to
evaluate the risk posed by the vessel and to take necessary
measures to reduce it. The security concept is wider than
the traditional maritime safety as the regulation is also
meant to be a measure in prevention of maritime terror-
ism. It is however stipulated explicitly that this surveil-
lance system is not to prejudice the jurisdiction of states as
regulated through the law of the sea.

The LRIT is mandatory to passenger ships, cargo ships
above 300 gross tonnage and mobile offshore drilling
units. They are required to have equipment that automatic-
ically transmits information via satellite on their identity
and position (and date and time). The transmission may
be turned off if necessary to protect information as far as
it is regulated through specific agreements. In contrast to
the AIS system, the access to information from the LRIT
is limited. The flag state is to receive information as well as
states which ports the vessels plan to call at. Coastal states
can receive information on vessels when position within a
radius of 1000 nautical miles from their coasts on the high
seas, the EEZ of other states or within its own maritime
zones. The information is to be disseminated through a
system of National, Regional, Co-operative and Interna-
tional LRIT Data Centres, using where necessary, the
LRIT International Data Exchange.\(^6^2\) Norway has estab-
lished a national database of continuously up-dated lists of
data on Norwegian flagged vessels, which is automatically
relayed to the LRIT data centre established by EU.\(^6^3\)

This database is coordinated with others, e.g. to provide
for the regional port State control regime.

Chapter VI and VII involve regulations on the carriage
of cargos, particularly regulations how dangerous cargo
is to be carried. There are specific rules on nuclear vessels
in chapter VII. Requirements on safety management of
vessels are included in chapter X before regulations of
maritime security in chapter XI.

These regulations are supplemented by different guide-
lines, recommendations and codes.

The Convention on the International Regulations for Pre-
venting Collisions at Sea (COLREG), adopted in 1972
entered into force 1977.\(^6^4\) The convention includes both
operational and equipment requirements. It sets the «rule
of the road» to be followed by vessels. COLREG includes
sections on Steering and Sailing, Lights and Shapes, and
Sound and Light signals. Technical requirements are part
of the Annex. COLREG supplements SOLAS chapter V
when regulating the behaviour of vessels in or near traffic
separation schemes adopted by IMO.

\(^{57}\) General Provisions on Ships’ Routeing adopted by the Organiza-
tion by resolution A.572(14) and MSC/Circ.1060 Guidance Note
on the Preparation of Proposals on Ships. Routeing Systems and
Ship Reporting Systems for Submission to the Sub-Committee
Safety/Navigation/Documents/1060.pdf

\(^{58}\) SOLAS Regulation V/19.

\(^{59}\) Norwegian Coastal Administration: Automatisk Identifikas-
jons System - AIS, available at http://www.kystverket.no/?-
did=9140988

\(^{60}\) Regulation on Harbours and Fairways of Svalbard of 30 Decem-
no/for/sfl/si-20091230-1846.html#22

\(^{61}\) Norwegian Coastal Administration: Automatisk Identifikas-
jons System - AIS, available at http://www.kystverket.no/?-
did=9140988

\(^{62}\) Report of the Maritime Safety Committee on its Eighty-First
Session, MSC/81/25/Add.1, Annex 13 Resolution MSC.210(81)
(Adopted on 19 May 2006) Performance Standards and Function-
al Requirements for the Long-Range Identification and Tracking
of Ships

\(^{63}\) Information on the LRIT data centre available at https://extranet.
emsa.europa.eu/index.php?option=com_content&view=arti-
cle&id=47&Itemid=88

\(^{64}\) The Convention on the International Regulations for Preventing
Collisions at Sea (COLREG), London, 20 October 1972, in force
The International Convention on Load Lines (Load Lines)\(^6\) aims at ensuring the stability of vessels by regulating the freeboard of ships. Vessels on international voyages are required to have the load lines marked on each side. The freeboard are calculated and/or verified by classification societies, which issue International Load Line Certificates. The requirements may vary by region and seasons as potential hazards differ. Intact Stability (IS) Code adopted in 2008 was made mandatory from 2010 under the SOLAS Convention and the 1988 Load Lines Protocol.\(^6\) In the recommendatory provisions chapter 6 provides for vessels operating in areas where ice accretion is likely to occur and adversely affect their stability. Icing allowances should be included in the analysis of conditions of loading.

The International Convention on Standards of Training, Certification and Watch-keeping for Seafarers (STCW) as amended in 2010 regulates minimum qualification standards on training, certification and watch-keeping for masters, officers and watch personnel on seagoing vessels. The training and qualification shall be verified by certificates issued by the relevant maritime authority. The regulations contained in the Convention are supplemented by the STCW Code. Part A of the Code is mandatory. The minimum standards of competence required for seagoing personnel are given in detail in a series of tables. Part B of the Code contains recommended guidance which is intended to help Parties implement the Convention. This last part also includes guidelines on training of masters and officers on vessels operating in Arctic waters.\(^6\)

They should have relevant experience and training on inter alia ice characteristics, ships performance in ice and cold climate, safe routing and passage planning to avoid ice.

### 3.3.2. Protection of the Marine Environment

**MARPOL 73/78**\(^6\)

The convention is aimed at preventing and minimizing pollution from ships - both accidental pollution and operational discharges. It includes six technical Annexes:

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70 MARPOL 73/78, Annex I/Regulation 15

71 MARPOL 73/78, Annex I, Regulation 34.

72 Ibid, Regulation 19.

73 MARPOL 73/78 Annex I, Regulation 20.
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Following maritime accidents involving oil tankers with subsequent pollution Annex I was amended several times to phase of the use of single hull tankers. New tankers of 5,000 dwt and more ordered after 6 July 1993 are to be fitted with double hulls.\(^7\) Older vessels were to be rebuilt or scrapped within certain time limits/ when they reached a certain age (up to 30 years old).\(^7\) The flag state may permit continued operation of smaller tankers and tankers built according to 1982 requirements beyond their phase-out date. These vessels have to be subjected to comprehensive control (Condition Assessment Scheme) and may not be used beyond 2015 or their 25 years of age if earlier. Under any circumstances a Contracting party to MARPOL 73/78 may deny the entry of such single hull tankers into its ports or offshore terminals. Consequently, Annex I includes ban on the carriage of heavy grade oil in single-hull tankers larger than 5,000 tons after April 2005 and in single-hull oil tankers between 600 and 5,000...
tons from 2008. The flag state may also permit continued the operation of single hull oil tankers between 600 and 5,000 tons carrying heavy grade oil as cargo, if it is fit, based on its size, age, operational area and structural conditions. Neither these tankers shall be permitted to operate beyond 25 years of its delivery. Contracting parties to MARPOL 73/78 may ban such vessels from entering their ports.

Special areas may be established under Annex I where there is a ban on any discharges of oil or oily mixture from oil tankers. Special areas under Annexes I, II and V are established on the basis of three types of criteria stipulated in IMO guidelines. They include oceanographic conditions, ecological conditions and vessel traffic characteristics. The oceanographic conditions are those that may cause concentration of harmful substances in the waters or sediments and include extreme ice state. The ecological conditions indicate that the area is in need of protection, such as threatened species, high biological productivity or fragile ecosystems. Vessel traffic characteristics imply a requirement of the existence of traffic density where discharges «would be unacceptable in the light of the existing oceanographic and ecological conditions».

The establishment of Special Areas is based on application by the affected Contracting Party/Parties, which are required to provide the necessary information. Several special areas are established under MARPOL Annexes, including for the North West European waters, which does not include Arctic waters and Antarctica.

As there are restrictions on operational discharges of oil and oily mixtures, there is a need for reception facilities. The Contracting Parties are obligated to provide for such facilities at oil loading terminals, repair ports, and in other ports in which ships have oily residues to discharge. When special areas are established the affected Coastal States shall ensure that all oil loading terminals and repair ports within the Special Area are provided with facilities adequate for the reception and treatment of ballast and washing water from oil tankers in addition to other residues and oily mixtures from all ships. The special area regulation will take effect first when adequate reception facilities are established.

Annex III concerns Regulations for the Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form. It includes general requirements on packing, marking, labelling, documentation, stowage, quantity limitations.

Annex IV on the Prevention of Pollution by Sewage from Ships. The annex includes requirement on sewage treatment system. There is a general ban on discharge of sewage except under the conditions prescribed: When the vessel is en route more than three nautical miles from nearest land (comminate and disinfect sewage) otherwise more than 12 nautical miles. The affected coastal States are required to have reception facilities.
Annex V concerns Pollution by Garbage from Ships garbage includes all kinds of food, domestic and operational waste. Grinded food wastes may be disposed of at a minimum three nautical miles from the coastline, depending on the type of garbage and their treatment. Grinded food wastes may be disposed of at a minimum three nautical miles from shore. In the special areas established under the annex, there is only a right to dispose of food wastes. Annex V special areas have been established in the North Sea and the Antarctic Area. Annex VI on prevention of air pollution from Ships set limits on emissions of sulphur oxide and nitrogen oxide from ship exhausts as well as particulate matter. There is also a ban on deliberate emissions of ozone depleting substances. In Emission control areas, more stringent standards are set. As the emission, requirements have implications for the types of fuel to be used there are requirements on fuel oil availability and quality.

The 2004 Ballast Water Convention (not in force)
The objective of the Convention as expressed in the preamble is to prevent, minimize and ultimately eliminate the risks to the environment, human health, property and resources arising from the transfer of Harmful Aquatic Organisms and Pathogens through the control and management of Ballast Water and Sediments of ships. The Annex includes technical standards and requirements.

All vessels regulated by the Convention are required to have a Water and Sediments Management Plan, which inter alia shall describe the actions taken to implement the requirements of the ballast water management. They shall also carry Ballast Water Record Book recording all relevant operations. The vessels shall carry out ballast water management procedures according to given standards. There are two standards: Ballast Water Exchange Standard and Ballast Water Performance Standard. Under the first standard involving the method of ballast water exchange the ratio of the volume exchanged shall be at least 95%. The performance standard involves qualitative discharge requirements. Methods used to fulfill this standard may include the use of on board technological treatment of the ballast water. Vessels are preferably to exchange ballast water at least 200 miles from nearest land at depths of 200 meters or more. The regulations provide for flexibility as the vessel may exchange at least 50 nautical miles from the coast and at minimum 200 meters depth when it is unable to comply with the first alternative. The relevant port State may designate areas for ballast water exchange even closer to the coastline if the previously mentioned distance or the depth requirements cannot be met. In addition, vessels are not required to comply with these requirements if the safety or stability of the vessels is threatened.

Parallel to the MARPOL 73/78 Special areas special requirements may be established for certain areas. The contracting parties may individually or collectively, consistently with international law proscribe requirements additional to those stipulated by the BWC. It could involve stricter ballast water exchange regulations in the maritime zones of the coastal States. However, such even if the regulation may consistent with international law it requires the approval of IMO to be applicable.

The Contracting Parties are also obligated to provide reception facilities in designated ports for reception of sediments and to inform other contracting parties about these facilities.

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97 Revised MARPOL Annex V, Regulation 3(2).
98 Revised MARPOL Annex V, Regulations 4 and 7.
100 Revised MARPOL Annex V, Regulation 1(14).
101 Revised MARPOL Annex VI Regulations for the Prevention of Air Pollution from Ships, Report of the Marine Environment Protection Committee on its Fifty-Eighth Session, Annex 13, MEPC 58/23/Add.1, Regulation 13 (NOx) and Regulation 14 (SOx and particular matters).
102 Revised MARPOL Annex VI, Regulation 13.6 and Regulation 14.3. Criteria and procedures for designation of emission control areas are included in Appendix III to the annex.
103 Revised MARPOL Annex VI, Regulations 14(4) and 18.
104 International Conference on Ballast Water Management for Ships, BWM/Conf/36, Adoption of the Final Act and any Instruments, Recommendations and Resolutions Resulting from the Work of the Conference International Convention for the Control and Management of Ships’ Ballast Water and Sediments, 2004, Annex International Convention for the Control and Management of Ships’ Ballast Water and Sediments, 2004. Under Article 18 the Ballast Water Convention enters into force twelve months after the thirtieth state, the combined merchant fleets of which constitute not less than thirty-five percent of the gross tonnage of the world’s merchant shipping, have either signed it without reservation as to ratification, acceptance or approval, or have deposited the requisite instrument of ratification, acceptance, approval or accession. As of 31 January 2011 27 states have become Contracting Parties; their fleet constitute 25.32% of the gross tonnage of the merchant fleet, see http://www.imo.org/About/Conventions/StatusOfConventions/Documents/Status%20-%202011.pdf
105 They are defined in Article 1(8) as «aquatic organisms or pathogens which, if introduced into the sea including estuaries, or into fresh water courses, may create hazards to the environment, human health, property or resources, impair biological diversity or interfere with other legitimate uses of such areas.»
106 Ballast Water Convention, Annex: Regulation B-1.
107 Ballast Water Convention, Annex: Regulations D-1 and D-2 respectively.
112 Ballast Water Convention, Annex: Regulation C-1
113 Ballast Water Convention, Article 5 and Article 14.
3.3.3. ILO Conventions
The abovementioned STWC adopted through IMO addresses the issue of minimum standards of competence for seafarers. The International Labour Organization has adopted over 60 maritime labour standards. ILO has special bodies and procedures for developing conditions of work of seafarers. It includes the Joint Maritime Commission, which advises the Governing Body of ILO on maritime issues. There are special maritime sessions of the International Labour Conference, which prepares and adopts Maritime Labour Standards. Seafarers’ standards cover a multitude of questions including minimum age, recruitment and placement, medical examination, repatriation, social security, hours of work and rest periods, crew accommodation, identity documents, occupational safety and health, welfare at sea and in ports, continuity of employment, vocational training and certificates of competency.

The 2006 Maritime Labour Convention was adopted to consolidate the more than 60 maritime labour instruments into a single instrument. The Convention is multi-purpose setting out principles on which the implementing national legislation is to be based. They include freedom of association, elimination of all forms of forced or compulsory labour, abolition of child labour and elimination of forms for discrimination. Further, the contracting parties undertake obligations on the employment and social rights of seafarers. It includes right to fair terms of employment, to decent working and living conditions on board ship and to health protection, medical care, welfare measures and other forms of social protection. These basic rights are to be developed and detailed in the Regulations and Guidelines.

Until the ILO Maritime Labour Convention enters into force the Merchant Shipping (Minimum Standards) Convention will be important setting minimum standards for living and working conditions.

3.2.1 Arctic Shipping recommendations

General
Although all the IMO conventions presented are applicable to Arctic Shipping, they include few regulations addressed to deal with the Arctic climate and sea ice. The development towards the use of goal-oriented CDEM standards leaving to classification societies and/or national authorities to adopt the specific regulations may mean that the standards are more adopted to the particular areas where vessels are to operate, including the Arctic waters. However, IMO has adopted more specific CDEM and operational standards applicable to shipping in Arctic waters. They are recommendatory and not legally binding and were included in the 2002 Arctic Shipping Guidelines. The guidelines were revised and amended in 2009. The 2009 Polar Shipping Guidelines are applicable to shipping both in Arctic and Antarctic waters. IMO has through the Maritime Safety Committee initiated a work towards transforming these guidelines into mandatory requirements. The presentation in this section will mainly be based on the Polar Shipping Guidelines but also some words on the guidelines for passenger vessels operating in distant waters. There is a guide on cold-water survival, which will not be addressed here.

Polar Shipping Guidelines
The guidelines are applicable to ships operating in Arctic waters or engaged in international voyages in Arctic waters (paragraph 1.1). The concepts of ‘ships’ and ‘international voyages’ are the same as those used in SOLAS 74 (paragraphs G–3.14 and .23). This means that guidelines are applicable to vessels above 500 tons and excluding fishing vessels, navigating between maritime zones of two or more states. Vessels irrespective of type and tonnage operating solely within the jurisdiction of a coastal State are excluded.

The geographical area of application relevant here (‘Arctic waters’) is clearly defined (paragraph G–3.3). It includes the Arctic Ocean and adjacent seas. Thus, the waters off Svalbard and the northern part of the EEZ of mainland Norway are subjected to the guidelines. In contrast to the 2002 Guidelines, the revised guidelines are applicable to all Arctic waters. ‘Ice-covered waters’ (defined in paragraph G–3.5) is used as a separate and additional criterion. Consequently, the guidelines or parts of them are applicable to areas that are not ice-covered (whether seasonal or permanently). It is worth noting that the definition of ‘ice-covered’ areas has been amended; now focusing entirely on the structural risk local ice conditions pose to vessels. The consequence is that guidelines on navigation in ice-covered areas may be applicable to a larger area of the Arctic waters and for a longer period of the year than

116 Maritime Labour Convention, Geneva 7 February 2006, not in force. The text is available at http://www.ilo.org/ilolex/cgi-lex/convde.pl?C186. Under Article VIII(3) the convention enters into force 12 months after at least 30 member States have accepted it accounting for 33% of the tonnage.
117 An overview of the ILO conventions to be replaced is available at www.ilo.org/global/standards/maritime-labour-convention/WCMS_150389/lang--en/index.htm
118 Maritime Labour Convention, Article III.
119 Ibid., Article IV

121 Guidelines for Ships Operating in Arctic Ice-Covered Waters, MSC/Circ.1056, MEPC/Circ.399, 23 December 2002.
123 Report of the Maritime Safety Committee on its Eighty-Sixth Session, MSC 86/26, paragraph 23.32.
under the previous guidelines. The re-definition of the concept does not make it easier to identify the relevant area.

The Polar Shipping Guidelines are based on an integrated approach, including recommendations on design, equipment, manning and the operation of vessels (paragraph P-2.2). It is aimed at both ensuring maritime safety and the protection of the marine environment (paragraph P-2.1). The guidelines are based on the applicable conventions and shall «mitigate the additional risk imposed on shipping due to the harsh environmental and climatic conditions» (paragraph P-2.7). Consequently, the Polar Shipping Guidelines include chapters on Construction, Equipment, Operational and Environmental protection and damage control (paragraph G-1.1).

The standards on construction are linked to the concept of 'Polar Class'. Only vessels with Polar Class or a comparable standard should operate in ice-covered areas (G-2.1). Further, vessels should have structural arrangement to withstand the ice conditions characteristic of their Polar class (paragraph 2.1.1). 'Polar Class' is assigned to a ship based upon the IACS Unified Requirements (paragraph G-3.19). IACS or the International Association of Classification Societies adopts unified requirements, which will be binding on their members. Each classification society has operated with its own ice classification and the IACS Unified Requirements on Polar Class are aimed at coordinating these. The IACS Polar Class requirements operate with seven different classes referred to in the Polar Shipping Guidelines based on the ability of the vessel to operate in ice-covered areas. Vessels in Polar Class 1 shall be capable of navigating year-round in all ice-covered waters while Polar Class 7 vessels can operate in first-year ice during summer and autumn. Even if the IACS unified requirements are directed at classification societies the reference to and use of them in the Polar Shipping Guidelines suggests that, they are intended to be part of and to complement the other requirements set by IMO through these guidelines. Further, the Polar Class requirements may supplement the goal-based standards as recently developed in the SOLAS 74 and qualify as more than guidelines.

Part A on construction includes chapters on structure, subdivision and stability, accommodation and escape routes, directional control systems, anchoring and towing, machinery and electrical installations. The effects of icing should be included in the calculation of stability (paragraph 3.1). The navigation on and through ice is also to be included. The Polar Class vessels should also be constructed as to maintain certain stability in damaged position as water is flooding (paragraph 3.3). They should be subdivided to ensure not to carry pollutants directly against the outer shell (paragraph 3.4). Vessels should also have double bottoms. The accommodation should be designed to protect the crew from unfavourable environmental conditions and ensure that escape routes are not made inoperable by ice or low temperatures (paragraphs 4.1 and 4.3). The vessels should be capable of anchoring in ice, provide, and receive towing assistance in situations of damage or breakdown (paragraph 6.1). The machinery systems should be suitable to navigation in ice-covered areas, stand the extra weight caused by navigation in ice and be easily and safely repaired en route (paragraphs 7.1 and 7.2). Electrical installations should be designed to operate in ice-covered waters and low temperatures and provide emergency heat and power (paragraph 9.1).

The recommendations of part B are also related to the adaption of equipment to the low temperatures and ice conditions. It includes the ventilation as well as fire protection systems, which should not be made inoperable by ice, snow or low temperatures (paragraph 10.3). The vessels should be equipped with supplies of protective clothing and thermal insulating materials for the intended voyage (paragraph 11.1). Lifeboats should be partially or totally enclosed to provide for adequate shelter from the anticipated operating conditions (paragraph 11.5) and be properly equipped and maintained. Among recommended navigational equipment is gyrocompass fitted with an alternative system (paragraph 12.2). Similar requirements for dual equipment apply to speed measurement, depth sounding, and radar equipment (paragraphs 12.3-12.5). All ships should be provided with equipment capable of receiving ice and weather information charts (paragraph 12.11).

The operational recommendations of part C recommend all vessels to have operational and training manuals. In the introductory part, it is stressed that safe operation conditions requires specific attention to human factors including training and operational procedures (paragraph P-2.5). The operational manual is particularly important if the vessel is involved in infrequent operations in Arctic waters. It shall stipulate both the normal operation of the vessel and risk management (e.g. evacuation procedures). The crew of the vessels should be made familiar with cold weather survival by training or self-study. Procedures on handling emergency, fire and evacuation should be made and drills held.

All ships operating in polar ice-covered waters should carry at least one Ice Navigator (paragraph 1.2). He/she should undertake continuous monitoring of ice conditions at all times while the ship is underway and navigating through/near ice. The Ice Navigator should have documented a satisfactorily completed an approved training (paragraph 14.2).
The part includes also recommendations on equipment; the ship should inter alia have adequate number of first-aid kits and equipment, (paragraph 15.1). Operating in remote areas with inadequate infrastructure the vessels are recommended to have reserve supplies (paragraph 15.2) and equipment to control and repair damages (paragraph 15.3).

The recommendations of the final part D on Environmental protection and damage control are due to lack of waste reception facilities and repair opportunities as well as limited opportunities of assistance. The ships should be equipped and the crew trained to control damage and to repair minor hulls in order to prevent escalation of the damage or the flooding before proceeding to the nearest repair location. The ship should also be capable of containing and cleaning up minor spills. The Polar Shipping Guidelines are more ambiguous on how to deal with operational discharges and the carriage of heavy oil, only referring to applicable national and international rules and regulations and industry best practices.

Guidelines for passenger ships operating in remote areas

The background for the adopting of these guidelines was the growing cruise vessel activities in remote areas in the Arctic and Antarctic waters. When operating in areas lacking the basic infrastructure there is a need to take extra precautions, out of consideration of both the safety of the crew and passengers and the protection of the environment. These guidelines supplement the Polar Shipping Guidelines in respect of passenger vessels operating in Arctic waters. They recommend a three-stage planning of voyages: collecting relevant information and data, detailed planning and execution of plan. In the first phase, the operator should collect information on available infrastructure in the area of voyage (charts, search and rescue resources and places of refuge) and assess its quality, which is to be taken into account in the drafting of the plan. The operator should also acquire knowledge on the ice conditions and how these together with environmental conditions such as current, wind, calm weather, fog and different seasons affect navigation in ice. The operators are required to have updated information on ice conditions in the area of voyage. The availability and use of ice navigators should have a bearing on the planned voyage. The detailed plans are to include the areas where it is safe to navigate and the areas that should be avoided. Further, a contingency plan should be developed for situations where emergencies occur in areas with limited search and rescue assistance. The detailed plan should also indicate under which conditions it is not safe to enter areas containing ice or icebergs, what is the safe distance to icebergs and speed in such areas. Relating to the execution of the plan, during the voyage, the plan should take into account the existing ice conditions and the measures to be taken before entering waters where ice may be present. The vessel should hold abandon ship drill and prepare special equipment.

3.3 Other relevant institutions

3.3.1 General
In addition to IMO and ILO, other international institutions or processes are relevant for Arctic marine shipping, involving cooperation between relevant states on policy setting, legislation and enforcement as well as non-state actors at global and regional level. First, the focus will be on classification societies as they may be important in the development of CDEM rules and standards. P&I Clubs and Marine Insurers are also relevant actors but will not be dealt with here. Thereafter the relevant Memorandums of Understanding on Port Control will be presented as port State control of international CDEM rules and standards are important supplement to flag state implementation. In the three following sections, the regional institutions and procedures will be addressed.

3.3.2 Classification societies
Classification of vessels originated in a need for ship-owners to document to their insurers and charterers that the vessel was built in accordance with acceptable standards.\textsuperscript{129} Class societies were established by insurers as non-profit organizations. The ship-owners became gradually more involved as the Classification Societies issued classification certificates. National legislation was adopted requiring mandatory surveys to verify the condition of the vessel. The societies were given public functions as their surveys of hull and machinery increasingly were accepted by the flag state as verification of standard.\textsuperscript{130} Currently more than 2/3 of flag states have delegated such powers to Class Societies.\textsuperscript{131} Obviously the dual role of the society may create conflicts of interest. Stricter requirements would cost the owners more money and reduce their profit.

The role of classification societies has also been recognized through IMO requirements, described as «codification of class» since 1959, providing standards for design and construction.\textsuperscript{132} Under the existing SOLAS 74 as discussed under section 3.3.2 the goal-based standards to be applicable to bulk carriers and tankers shall be met by «satisfying applicable structural requirements of an organization, which is recognized by the Administration in accordance with the provisions of regulation XI-1/1, or national standards.»\textsuperscript{133} Mansell\textsuperscript{134} points out that the regulation does not specify which standards to be applied by the classification society. However, the authorization procedures for societies established by IMO are aimed at ensuring that they provide the adequate standards. Further, the International Association of Classification Societies (IACS) referred to above under section 3.3.5 has adopted several unified requirements, inter alia on Polar Class.\textsuperscript{135}

These requirements will be binding on its members having adopted rules for the relevant type of vessel.\textsuperscript{136} Its membership classes 94% of all commercial tonnage and therefore these requirements will have broad application. Further, the European Community has adopted legislation implementing IMO guidelines on recognition of classification societies that will imply stricter obligations for vessels flagged in member States.\textsuperscript{137} This legislation will also be applicable to Norway when implemented through the EEA Agreement, presented below under 3.4.7.

However, as discussed above the goal-based standards for vessels to be implemented through SOLAS 74 means that vessels are to be designed and constructed according to its area of operation. Here the Polar Class of IACS will have statutory character in respect of the vessels to be classed by one of its members.

3.3.3 Memorandum of Understanding on Port State Control
The flag states are the subjects of the obligations under the IMO and ILO Conventions referred to above. The conventions stipulate minimum standards and rules to be implemented through national legislation and enforced by the flag state parties. The conventions also include provisions where other states are competent to enforce the CDEM rules and standards in respect of foreign flagged vessels visiting their ports.\textsuperscript{138} The responsibility of the flag state for the vessels flying its flag is also regulated in the LOS Convention, primarily Article 94 establishing their fundamental duties to ensure compliance with general accepted regulations, procedures and practices.\textsuperscript{139} These include those related to safety of life at sea, prevention of collisions and prevention of marine pollution.

In addition, the port State is mandated under the LOS Convention inter alia to ensure that vessels are in compliance with applicable international rules and standards on seaworthiness, Article 219. It is required to prevent sub-standard vessels from sailing if they pose a threat of damage to the environment. The implications of these regulations on the competence of Norway as coastal and port State will be addressed in subsequent chapters. The flag state may lack ability and/or willingness to ensure compliance. The port State has a role as a ‘last safety net’

\textsuperscript{130} Mansell, op.cit., p.128
\textsuperscript{131} Ibid.
\textsuperscript{132} Mansell, 2009, supra note 130, p.133.
\textsuperscript{133} SOLAS 74, Regulation 3-10(3).
\textsuperscript{134} Mansell, 2009, supra note 130, p.133-134.
\textsuperscript{135} IASC Unified requirements, 1997 Polar Class, supra note 126.
\textsuperscript{138} MARPOL 73/78, Article 5.
both in the LOS Convention and the IMO and ILO Conventions.\textsuperscript{140} In January 1982, ministers from fourteen European states including Norway met in Paris to sign a regional memorandum of understanding on port State control (Paris MoU).\textsuperscript{141} The member States committed themselves to inspect the compliance of 25% of the foreign-flagged vessels visiting their ports with CDEM rules and standards adopted through IMO and ILO Conventions. The port State control consisted of control of the certificates followed by physical control of the vessel if there is reasonable ground for believing that it was not in compliance. The Paris MoU has been complemented by eight other regional MoUs.\textsuperscript{142} The purpose of these regional memoranda of understanding is to ensure that the port States really use their competence and that they coordinate their control of vessels.\textsuperscript{143} Without them the danger is that some become ports of convenience where substandard vessels may call without risking control or other port State measures.

Vessels involved in trans- or intra Arctic shipping will be subjected to several MoUs: In the North Atlantic (and the Arctic Ocean) the port States, including the member States of EU, Norway, Iceland, Canada and Russian Federation are members of the Paris MoU. In Asian and Pacific waters, port States such as Canada, Russia, Japan, South Korea and China are members of the Tokyo MoU.\textsuperscript{144} USA is member of neither but has established its own port State control.\textsuperscript{145} The MoUs are in continuous development on cooperation and types of enforcement measures. These will be addressed in a later chapter on Port State Jurisdiction. The MoUs are not legally binding on its member States. However, as will be shown the European Union has made the MoU legally binding through its legislation, which is applicable to Norway through the Agreement on European Economic Area (EEA Agreement).

3.3.4 Arctic Council

The Arctic Council was set up in 1996 by the eight states of the region as a ‘high level forum’ for discussion of all issues in the Arctic, in particular the protection of the environment, sustainable development and the interests of the native people.\textsuperscript{146} In addition to the eight Arctic member States (Canada, USA, Russian Federation, Denmark, Iceland, Norway, Finland and Sweden) six organizations representing Arctic indigenous peoples are permanent participants of the Arctic Council.\textsuperscript{147} It is not an intergovernmental organization with decision-making competence. The highest organ of the Arctic Council, the Meeting of ministers convenes biannually. The Arctic Council has six Working Groups: Arctic Contaminants Action Plan (ACAP), the Arctic Monitoring and Assessment Programme (AMAP), Conservation of Arctic Flora and Fauna (CAFF), Emergency Prevention, Preparedness and Response (EPPR), Protection of the Arctic Marine Environment (PAME), and Sustainable Development Working Group (SDWG).

In 2004 the Arctic Climate Impact Assessment (ACIA) Report commissioned by the Arctic Council was published.\textsuperscript{148} One of its key finding is that marine transport and access to marine resources in the Arctic will increase due to reduced sea ice.\textsuperscript{149} The Arctic Marine Strategy Plan (AMSP) adopted the same year is one of several responses to the ACIA report by the Arctic states.\textsuperscript{150} The AMSP identifies both opportunities and threats following increased access to Arctic marine waters.\textsuperscript{151} The LOS Convention remains the legal framework for implementing the plan.\textsuperscript{152} One of the measures was to conduct a comprehensive assessment of Arctic marine shipping and based on the findings, adopt recommendations to the International Maritime Organization (IMO) and other international bodies, as appropriate, to guide the management of Arctic marine shipping.\textsuperscript{153}

The Arctic Marine Shipping Assessment (AMSA) Report referred to in the introduction was submitted to the 2009 Arctic Council Ministerial Meeting in Tromsø.\textsuperscript{154} It contains a considerable number of recommendations on marine safety, protection of the environment and people and improving marine infrastructure.\textsuperscript{155} To improve

\begin{itemize}
  \item Declaration on the establishment of the Arctic Council, Joint Communiqué and Declaration on the Establishment of the Arctic Council, 35 ILM, p.1382 available at http://arctic-council.org/filearchive/ottawa_decl_1996-3..pdf
  \item More information is available at http://arctic-council.org/section/permanent_participants.
  \item The ACIA overview report, supra note 1.
  \item Ibid, Key finding # 6.
  \item AMSA, op.cit., paragraphs 4.2 and 5.2.
  \item AMSA, supra note 150, paragraph 6.0.
  \item AMSA, supra note 150, paragraph 7.1.5 and 7.2.2.
  \item Tromso Declaration on the Occasion of the Sixth Ministerial Meeting of the Arctic Council, 29 April, 2009, Tromsø, Norway, Arctic Marine Environment.
  \item AMSA Report, supra note 3, The Arctic Marine Shipping Assess-
marine safety the Arctic States should within identified areas establish «unified positions» and work together through relevant intergovernmental organizations such as IMO to promote safety of Arctic shipping. Their maritime regulatory authorities should meet in order to promote coordination and harmonization of the regulations. These recommendations are specified as the Arctic states are recommended to «collectively support» the efforts by IMO to strengthen and update international standards, including the updating of the Arctic shipping guidelines and to make them mandatory. The Arctic states are also recommended to «explore» the harmonization of the shipping regulations of the coastal States within national jurisdiction to provide the basis for regulations in the adjacent areas of the high seas to be adopted by the IMO. In the AMSA report the focus is on the regulations of Canada and Russia, which both are based on Article 234 of the LOS Convention.156 These coastal State regulations are not consistent according to the report.

Common regulations for the shipping in the Arctic Ocean would mean improved predictability for the industry. Another consequence could be a stronger influence of the coastal States on international shipping regulations than usual. Adoption of regulations for the high seas based on coastal State regulations would provide stronger legitimacy to their interpretation and application of Article 234. One of the (not surprising) findings is the ambiguity of this provision. Other recommendations include measures to improve passenger vessel safety and to develop a multilateral search and rescue instrument for the Arctic. The environmental protection recommendations include the identification of areas with heightened ecological significance and the measures to protect them could include adoption of measures under IMO such as special area under SOLAS or a combination of measures through PSSA measures. Arctic states shall also to cooperate on the prevention of oil spills. The AMSA report finally includes recommendations on developing infrastructure such as training in ice navigation, navigational charts, port services, monitoring and tracking marine activity and the development of environmental response capacity.

The findings and recommendations of AMSA were approved by the Meeting of Ministers of the Arctic Council.157 It particularly encouraged cooperation within IMO on development of adequate measures to reduce impact of Arctic shipping on the environment. Further, it stressed the importance of the Arctic Shipping Guidelines being made mandatory and that other IMO safety and environmental protection instruments be amended particularly for the condition of Arctic shipping. The operative body (Senior Arctic Officials or SAO) was requested to develop «appropriate follow-up actions».158 The most concrete conclusion was the establishment of a task force co-chaired by USA and Russia mandated to develop and complete negotiation on an international instrument on cooperation on search and rescue operations in the Arctic by 2011.

The SAO endorsed a proposal for follow up of the AMSA recommendations in format of a matrix where they are allocated between the Arctic Council working groups.159 The work on follow up has started, responsibility have been allocated between member States and working groups.160 In May 2011 the Arctic Council issued a report on the status on implementation of the AMSA recommendations.161 The Arctic Search and Rescue Agreement was concluded at the meeting. A task force has been established to develop an international instrument on Arctic marine oil preparedness and response.162

The member States have worked through inter alia IMO, which has started a work to make relevant parts of the Arctic Guidelines legally binding (Polar Code).163 According to the status report the five coastal States will following the adoption of a Polar Code assess whether additional measures are required for their maritime zones and consider how these measures could best be harmonized.164 Norway, Russia and USA are following up actions related to regulating the use and carriage of heavy fuel oil.165 In the first phase they will identify the environmental risks and options for, avoiding or minimizing risks regarding the use and carriage of heavy fuel oil in the Arctic. Det Norske Veritas has prepared a report to PAME on heavy fuel in the Arctic.166 It may lead to a proposal for amend Annex I of MARPOL 73/78 in order to reducing the probability for HFO spills from ships in the high Arctic.167 CAFF, AMAP and SDWG have started work to identify potential areas of heightened ecological and cultural significance. Based on these assessments the Arctic Council may receive proposals for possible IMO regulations, e.g. special areas under MARPOL Annexes.

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156 Ibid., p.66–69.
157 See footnote 156.
158 More information on the governing structure of the Arctic Council is available at http://arctic-council.org/article/about.
162 Nuuk Declaration on the Occasion of the Seventh Ministerial Meeting of the Arctic Council, 12 May 2011, Nuuk, Greenland.
163 Report of the Maritime Safety Committee on its Eighty-Sixth Session, MSC 86/26, paragraph 23.32
165 Ibid., p.5.
166 Det Norske Veritas, Heavy Fuel in the Arctic (Phase 1), available at www.pame.is/amsa.
167 Record of Decisions and Follow-Up Actions PAME I-2010 (3-5 March 2010), available at www.pame.is/images/stories/ PAME_I-2010_RoDs_with_Annex_I_and_II.pdf
3.4.5 The Arctic coastal States

The 2004 ACIA lead to increased international attention to the maritime areas of the Arctic. Media reports suggested that these areas were in a legal void and predicted that there would be a rush for its natural resources. Proposals for establishing a comprehensive legal regime for the management of the maritime areas similar to Antarctica were put forward. On this background, the Foreign Ministers of five Arctic coastal States (Canada, Denmark, Norway, Russia and USA) met on Greenland in 2008. Their meeting resulted in the Ilulissat Declaration. When the states with coastlines fronting the Arctic Ocean, explicitly referring to their sovereignty, sovereign rights and jurisdiction over large areas, chose to operate outside the Arctic Council, they sent a clear message that they have a special role in the Arctic; later described as a stewardship role. They further stressed that there is «extensive international legal framework», the law of the sea applicable to the Arctic Ocean and there was no need to develop a new comprehensive international legal regime. The law of the sea, the International Maritime Organization and the Arctic Council, form the core features of the regime that governs the Arctic. Their stewardship role or special responsibility involves taking national measures and to cooperate directly as well as cooperating through IMO to strengthen existing and to develop new safety measures to prevent and reduce vessel-source pollution. Increase in marine shipping also calls for initiatives to strengthen the search and rescue capabilities of the region through multilateral instruments. The Arctic coastal States underline the need to cooperate with other interested parties; the Arctic Council is identified as a relevant organ inter alia because it has been engaged in shipping issues.

The foreign ministers of five Arctic coastal States met again in Canada in March 2010. They reaffirmed their commitment to peaceful uses and responsible management of the Arctic Ocean by referring to their cooperation on scientific and technical issues relating to the delineation of the outer limits of their continental shelf. It is interesting to note their reference to the work undertaken under the Arctic Council, inter alia on search and rescue and their commitment to implement the Arctic Offshore Oil and Gas Guidelines also adopted through the Arctic Council. The concern that the five coastal States somehow would side-track the Arctic Council has not manifested. The exact role of the cooperation between the five Arctic coastal States as a forum is not clear, except for stressing the particular rights and obligations of coastal States under the law of the sea.

3.4.6 Other relevant Arctic cooperation

The Bonn Agreement referred to above is not applicable to the Arctic. Norway has entered into bilateral agreement with Russia on oil preparedness in the Barents Sea. The 1994 Joint Norwegian-Russian Contingency Plan for the Combating Oil Pollution in the Barents Sea provides the basis of practical joint activities. The parties are obligated to assist each other in combating oil pollution that may affect their maritime zones, irrespective of its origin. They are to prepare a joint emergency plan for this purpose. Under the agreement, the parties are obligated to notify the other about oil pollution that may affect its zones. The parties have also committed themselves to hold regularly exercises to combat pollution both in Norway and in Russia. Earlier the joint training was organised every other year; in the last few years the exercises are held at least once a year.

3.4.7 The European Union and Arctic Shipping

The jurisdiction of Norway as flag, coastal and port State may also be restricted through the European Economic Area Agreement, which provides Norway access to the internal market of the European Union.

EU (European Parliament and the Council) is competent to adopt legislation for sea and air transport. Norway is under an international legal obligation to implement the EU directives and regulations on maritime transport, which are included in the EEA Agreement and those subsequently adopted by the EEA Joint Committee.

168 An example is Scott Borgerson, «Arctic Meltdown; The Economic and Security Implications of Global Warming», Foreign Affairs, Vol. 87:2, 2008 describing the maritime Arctic as «no-man’s land».


170 The text of the declaration is available at http://arctic-council.org/filearchive/Ilulissat-declaration.pdf


173 The Chair’s Summary available at http://www.international.gc.ca/polar-polaire/arctic-meeting-meeting-arctique-2010_index.aspx


176 Ibid.


179 EEA Agreement Articles 47-52 and Annex XIII/V

180 EEA Agreement, Article 104, cf. Article 47(2) and Annex XIII (on the decision-making of the Joint Committee).
The enter into force of decisions by the Joint Committee may depend on consent by the parliaments or other constitutional requirements. Under the Norwegian Constitution, such consent is needed in cases of special importance or where the treaty obligation requires amendment of legislation or another decision by the Parliament.

The EEA agreement is not applicable to Svalbard. Norway may adopt consistently with its sovereignty under Article 1 of the Svalbard Treaty legislation regulating foreign vessels visiting its ports. But the equal right of vessels of contracting parties to access ports and to carry out activities there on «...equal footing...» under Article 3 implies that such legislation has to be applied to Norwegian flagged vessels as well.

3.5 Summing up

This presentation documents that IMO supplemented by ILO is supreme in developing the international legal regulations on maritime safety and protection of the marine environment, including the Arctic waters. The legal instruments have to a limited degree met the specific conditions of Arctic marine shipping. The reason is that international shipping in Arctic waters has been rather modest so far. The initiatives inter alia taken by the Arctic states to develop the Polar Shipping Guidelines into a Polar Code including legally binding requirements may change this. It is important to note that SOLAS 74 by including goal-based standards for certain vessels imply particular requirements for vessels operating in Arctic waters. Nevertheless, the specification of different rules and standards in a Polar Code will better provide for common understanding of such norms and thus for predictability.

International shipping has predominantly taken place in coastal waters. The coastal States’ regulations, based on Article 234 of the LOS Convention will be addressed in chapters 5 and 6. This raises an interesting question on the relationship between the regulation of the Arctic coastal States and IMO, which will not be addressed in detail in this report. In recommendation of AMSA and in the report on the status of the implementation of the AMSA the relationship is highlighted. There is a need for harmonization to ensure predictability. In any case the coastal States are required to involve IMO in order to adopt, particular operational requirements in adjacent areas of the high seas (e.g. ship routeing under SOLAS 74 and special areas under MARPOL 73/78).

The concern following the 2008 Ilulissat declaration that the Arctic coastal States would outmanoeuvre the Arctic Council has not manifested. Their meetings have been important to demonstrate that they have particular rights and interests in the region as coastal States under the law of the sea and that not all issues are subjected to broad international cooperation. However, they have accepted to use the Arctic Council as a forum for cooperation inter alia in the follow-up of the recommendations of the AMSA report. The clearest example is the negotiation in the Arctic Council of a regional Arctic SAR instrument originally initiated and to be implemented by them.

Although it is too early to conclude, it seems that the Arctic Council has been assigned a role in the regulation of Arctic Shipping: putting issues on the agenda, relevant information (data and research) is collected through its working groups and initiatives are taken in respect of international organizations such as IMO. The mapping of vulnerable maritime areas that may lead to application for special area status area under MARPOL 73/78 is an example.

Port State Control conducted through the existing regional MOUs, and particularly the Paris and Tokyo MoU, will be important to ensure the compliance with a mandatory Polar Code as well as other IMO and ILO conventions. To the extent that the coastal States set their own regulatory measures, these may prove more difficult to enforce through these MoUs. Port state control will be revisited in chapter 5.

Another interesting point is what role the European Union will have in regulation of Arctic shipping through the EEA Agreement. It may both limit and expand the opportunities of Norway as a coastal and port State. This will be assessed through chapters 4 and 5.

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181 EEA Agreement, Article 103
182 The Constitution of Norway, as laid down on 17 May 1814 by the Constituent Assembly at Eidsvoll and subsequently amended, Article 26, second paragraph, available in English at http://www.stortinget.no/en/In-English/About-the-Storting/The-Constitution/The-Constitution/
183 EEA Agreement, Protocol 40.
4 Norway as a Port State

4.1 Introduction

4.1.1 Overview

The objective here is to present and assess the rights and obligations of Norway to use its ports in mainland Norway and on Svalbard to ensure maritime safety in the Arctic and protection of its marine environment. The research questions will be more specifically identified in the subsequent sections. In section 4.2 the port State jurisdiction to legislate in respect of so-called CDEM rules and standards and operational requirements are investigated before their enforcement is addressed in section 4.3 and the relevant Norwegian legislation in Section 4.4 before assessments are provided in Section 4.5. Before these questions are addressed the legal basis and in particular the limitations on port State jurisdiction will be investigated in section 4.1.2. As will be seen, exercise of port State jurisdiction involves to a large degree questions of general international law.

4.1.2 Legal basis and constraints

As the port lies in the internal waters it is subjected to the sovereignty of the state.184 This was confirmed by the ICJ in the Nicaragua case to be part of general international law.185 There is general agreement that with the exception for port of refuge there is no right for vessels under general international law to access foreign ports.186 Consequently, the port State exercising territorial sovereignty may refuse or ban vessel access and less establish requirements or conditions for vessels calling at port.187 By voluntarily calling at port the vessel accepts to be subjected to the sovereignty of the port State. The port State normally does not exercise jurisdiction over vessels in matters of internal economy and never over state vessels.188

As Ringbom189 rightly points out the controversy is not any longer about the existence of a right of the port State to exercise jurisdiction over foreign vessels but about the limitations to this right. A central question to be discussed here is how far the port State may go in the exercise of jurisdiction over foreign-flagged vessel without infringing on the rights and obligations of the flag state.

The regional Port State Control schemes, which are based on the sovereignty of the state over its ports are described as «... systemic approach to the inspection of ships [...] to ensure compliance with international standards ...»190 These international standards are found in IMO and ILO Conventions such as SOLAS 74, COLREGS, MARPOL 73/78, STCW and the Merchant Shipping (Minimum Standards) Convention.191 One example of such scheme is the 1982 Paris Memorandum of Understanding between maritime administrations of the North-East Atlantic and Canada of which Norway is a member.192 These regional schemes are in general uncontroversial under international law as the port State control are limited to ensuring that vessels are in compliance with international legally binding norms which in force between the majority of the flag states (in numbers and in portion of the total commercial tonnage).

The controversies arise when the port State is exercising jurisdiction beyond merely assisting the flag state in ensuring compliance with rules and standards that are generally accepted. This will be the case when the port State unilaterally applies its national legislation to foreign vessels and even take criminal proceedings if these are violated. In the following, the limitations on the right to exercise such jurisdiction will be amongst those to be investigated.

First, some general observations on the scope of port State jurisdiction. Such jurisdiction is based on the sovereignty over the territory of which the port is a part. It may be described as the territorial principle. Under the territorial principle the port State may legislate and enforce in respect of the activities and omissions by the foreign flagged vessel or its crew within the port or other parts of the internal waters.193 Under the LOS Convention the state is competent to legislate in respect of foreign flagged vessels navigating through its territorial sea and EEZ.194 It may take enforcement measures in respect of violations of such legislation within these zones if the vessel later calls at one of its ports. This right is explicitly provided for in LOS Convention Article 220(1). In all this situations the state is acting as a ‘coastal State’ regulating activities within maritime zones where it enjoys sovereignty and sovereign right.

190 David VanderZwaag et al, Governance of Arctic Marine Shipping, p.34, Dalhousie University, 10 October 2008, available at www.arcticportal.org
192 The «relevant» instruments of Paris MoU are listed in its section 2.1, available at www.parismou.org
194 The scope of its legislative jurisdiction is regulated in LOS Convention Part II (territorial sea), Part V (Exclusive Economic Zone) and Part XII (for both zones).
The port State concept is usually used in situations where the state aims at exercising jurisdiction over foreign vessels for their activities in areas beyond its jurisdiction or where the exercise of jurisdiction has extra-territorial aspects or consequences. The territorial principle does not provide the port State with legal basis for exercising jurisdiction over foreign flagged for their activities on the high seas or in the maritime zones of other states. A particular legal basis is needed to exercise such extra-territorial jurisdiction. Article 218 of the LOS Convention and other possible legal bases for exercising extra-territorial jurisdiction will be discussed in section 4.2. In this chapter there will also be a discussion on how far the port State may exercise jurisdiction based on the territorial principle without infringing on the jurisdiction of the flag state. It is typically, where there are extra-territorial implications.

First some more general limitations on the port State jurisdiction and consequently to apply unilateral national legislation will be addressed. The jurisdiction of Norway as a port State based on general international law may have been limited through treaties and other international law applicable law. The question is whether Norway enjoys jurisdiction and consequently to apply unilateral national legislation will be addressed. The jurisdiction of Norway as a port State based on general international law may have been limited through treaties and other international law applicable law. The question is whether Norway enjoys what Molenaar describes as 'residual jurisdiction' to adopt and enforce such legislation or whether Norway is restricted to exercise this jurisdiction within particular framework set by treaties or other international law applicable to Norway. In our context these treaties include the LOS Convention and IMO Conventions such as the SOLAS 74 and MARPOL 73/78. In addition, the jurisdiction may be limited by obligations under the EEA Agreement.

The reference in several provisions of the LOS Convention, including Article 219 to the concepts of generally accepted or applicable international rules or standards may be read as limiting the port State jurisdiction. They may be viewed as setting a maximum for port State regulations. However, as pointed out by several writers, other provisions such as Article 25(2) and Article 211(3) presuppose that the jurisdiction is not restricted. 197

197 Under Article 211(3) a state may apply particular requirements to foreign flagged vessels visiting its ports, indicating that it is competent to establish national regulations in addition to and that may be stricter than the generally accepted rules and standards. There are convincing arguments that the LOS Convention does not restrict the port State jurisdiction. But the jurisdiction may have to be exercised within the safeguard clauses of part XII to be addressed later in this paper.

The question whether the port State has accepted to limit its jurisdiction through the acceptance of IMO conventions such as SOLAS 74 and MARPOL 73/78 is more open for discussion. Oya Özçayır with reference to a New Zealand judgment where these conventions were considered seems to conclude that the port State does not enjoy any additional or ‘residual jurisdiction’. Molenaar on the other hand argues that the IMO Conventions are more about setting technical standards than regulating jurisdiction of states. The port States are merely assisting in enforcing these standards. If the intention was to limit the jurisdiction of the port State it is argued this could have been more explicitly stated. Boyle simply states that «no provisions […] allows the port State to set its own national standards on any of these matters, but nor do they prohibit it from doing so. » The requirement under SOLAS and MARPOL 73/78 that the port State apply their standards to vessels of non-contracting parties (so-called NMFT clauses) suggests that the port State retain residual jurisdiction. The MARPOL 73/78 is one of the IMO convention that also explicitly states that it is not intended to prejudice rights of contracting parties under the law of the sea. The main argument against residual jurisdiction is that it may undermine the overall objectives of the convention to provide for uniform standards. This suggests Ringbom, may prevent the port State from applying the most radical national standards.

Norway has an international legal obligation to implement EU directives and regulations on maritime transport, which included in the EEA Agreement and adopted by the EEA Joint Committee. As may be recalled the EEA Agreement does not include Svalbard. Applicable EU legislation may affect the exercise of port State jurisdiction of Norway.

It would restrict Norway from establishing particular requirements for Arctic shipping as far as it is not part of Community legislation.

203 MARPOL 73/78, Article 9.
204 Ringbom, 2008, supra note 15, p.221.
205 Ibid, p. 222.
206 See section 3.4.7. EEA Agreement, Article 104, cf. Article 47(2) and Annex XIII (on the decision-making of the Joint Committee). The relevant EC legislation adopted prior to the EEA Agreement and included in its protocols or annexes, are integrated part of the EEA Agreement under its Article 119. EEA Agreement, Protocol 40.
The EU Port State Control (PSC) Directive involves in contrast to the Paris MoU legal obligations for Norway and other EEA member States to monitor and control vessels calling at their ports. The PSC Directive does not include any savings clause as the regional MoUs or some IMO Conventions. Such clauses indicate that the instrument is not intended to restrict the exercise of port State jurisdiction. The PSC Directive is aimed at establishing ‘common criteria’ for vessel control and for ‘harmonizing’ inspection and detention procedures. These objectives seem to leave little room for the individual port State to set its own national standards. Molenaar argues that ‘...In view of the increasingly pervasive nature of EU regulation in the sphere of maritime safety and vessel-source pollution, EU Member States appear to have lost much of their residual port State jurisdiction...’ It is important to note that Norway is not a member of the EU and that its legislation is binding on Norway as international law. Any shift in legislative competence between the member States and the EU as the Community legislation expands does not directly affect Norway. The primary purpose of the PSC directive is to ensure compliance with international rules and standards found in IMO and ILO Conventions. It is thus problematic to read it antithetical as excluding Norway as a port State from establishing additional national regulations. Therefore, it must be concluded that obligations under the EEA agreement in general and the PSC Directive in particular do not limit the port State jurisdiction of Norway. Norway would however be obligated under LOS Convention Article 211(3) to inform IMO about unilateral national legislation. The same would probably be the case with the EU as maritime transport is part of the EEA Agreement.

Although having residual jurisdiction its exercise may still be limited by principles under general international law such as non-discrimination, good faith, abuse of rights and proportionality in exercising enforcement jurisdiction, which is partly codified by the LOS Convention. When the port State is exercising jurisdiction under part XII of the LOS Convention it is inter alia obliged not to discriminate directly or indirectly against the vessel of any other state, Article 227. Establishing qualitative requirements such as CDEM rules and standards seems to be uncontroversial as far as they are equally applicable to vessels flying of all states. However, establishing national CDEM rules and standards may conflict with other principles. But they are of vague character and thus their violation is therefore not easily identified. Ringbom has summarised these principles as a requirement that the port State measures must pass a reasonableness test.

To sum up: The territorial jurisdiction of Norway over its ports is based in general international law. As a port State, it has assumed rights and obligations to exercise such obligation under treaties such as the LOS Convention and the EEA Agreement to ensure that foreign-flagged vessels comply with general accepted international rules and standards. However, this does not exclude Norway from adopting its own national legislation applicable to foreign vessels. All exercise of port State jurisdiction must be undertaken within the limits of international law. In the following, we will return to this when discussing the different measures.

4.2 Port state regulating maritime safety and environmental protection

4.2.1 General

In this section, various requirements that may be established by Norway as a port State for vessels operating in the maritime Arctic will be considered. The enforcement of these requirements will be dealt with in section 4.3. The presentation and analysis of the requirements will follow a traditional structure: first will requirements concerning the construction, design, equipment and manning (CDEM) of vessels be addressed (section 4.2.2). Then possible operational requirements (particular related to navigation and pollution) will be addressed in section 4.2.3. The rationale for distinguishing between the two types of regulations is that their legal basis may be different.

4.2.2 Construction, design, equipment and manning requirements

The international conventions such as the SOLAS 74, MARPOL 73/78, LL Convention and STCW 78 include as described under section 3.3 CDEM rules and standards.

It is uncontroversial for the port State to undertake control to verify whether foreign vessels comply with rules and standards adopted under these treaties under Port State Control schemes since they are accepted by most flag states and the IMO conventions ascribe the port State a role in their enforcement. SOLAS 74, LL Convention, MARPOL Annexes I and II and STCW 78


211 Molenaar, 2007 supra note 211, p.231.

are ratified and acceded to member States accounting for 99% of the merchant tonnage, while MARPOL Annexes III–VI are binding on between 82 and 97% of the world merchant tonnage. With such adherence the rules and standards of these Conventions may safely be described as “generally international accepted”. As we shall see later, the wide acceptance may have consequences for both the port and coastal State jurisdiction. It is less controversial for a port State or a coastal State to apply norms that are accepted by most flag states.

Oil pollution is identified by the AMSA report as the major threat by international shipping to the Arctic environment. CDEM rules and standards have already been amended to prevent such consequences. MARPOL Annex I on prevention of pollution of oil now includes a ban on single hull oil tankers above 600 tons to carry heavy grade oil. The flag state may under certain circumstances allow single hull vessels to carry heavy grade oil. States are however as referred to in section 4.2.2 explicitly entitled to prohibit these vessels from entering their ports. These regulations are clearly relevant to the Arctic port States.

The question is whether the Arctic coastal and port States may go a step further and ban the carriage of heavy fuel both as cargo and use of fuel in the Arctic similarly to the recent ban in the waters off Antarctica. It would mean that heavy oil could neither be carried on double-hull tankers. The Arctic states are considering as referred to in section 3.4.4 whether to submit a proposal to the IMO for such regulations. The unilateral adoption of the Arctic states of such measures will become topical if such proposal was to be rejected. Their right to adopt such regulations for the Arctic waters will be discussed in this report. There are different views on whether such requirements on use of heavy grade oil as fuel qualify as CDEM rules and standards or as operational requirements. But such characterisation has less bearing on the scope of port State jurisdiction. It is however natural to view them as static requirements since they will be applicable to the vessel when navigating in areas beyond the jurisdiction of the port State. These requirements will therefore be discussed in this section.

Therefore, the purpose here is to investigate – based on discussions in section 4.1.2 whether Norway as a port State is competent to adopt regulations requiring foreign flagged vessels operating in Arctic waters to comply with the particular CDEM rules and standards equivalent to the present Polar Shipping Guidelines presented above under 3.3.5. They include inter alia the requirement that vessels navigating in ice-covered areas are to be constructed and designed according to the Polar Class designation or a comparable alternative standard of ice-strengthening. Different polar classes (and consequently construction and design) are available from the class for vessels operating year round in Arctic waters to class for vessels that only may operate during the summer/autumn season. The guidelines also include requirements that equipment such as fire pumps, life-saving appliances, life boats are designed for Arctic climate. There is finally one particular manning requirement; vessels are required to have at least one ice navigator on board. Other CDEM requirements than those stipulated in the Polar Shipping guidelines may be may be relevant but they involve much of the same legal discussions.

Before the question on whether the CDEM standards of the Polar Shipping Guidelines may be applied by Norway as a port State is addressed, some words on the law applicable to such requirements.

The character as static standards
The prescription by the port State of CDEM rules and standards applicable to foreign flagged vessels may be based on the territorial principle as described in section 4.1.2 since their non-compliance is obvious in port. Since these standards are continuous or static they will be applicable to the vessel wherever it sails. The application by the port State of such rules and standards has subsequently extraterritorial effects. It may be argued by flag state that such legislation infringes on their exclusive flag state jurisdiction. If these rules and standards are considered generally international accepted their extra-territorial effects are not problematic. Then the port State may be regarded as assisting the flag state in ensuring that they are complied with.

There are no clear limits as to how far the port State may rely on the territorial principle in adopting unilateral CDEM rules and standards (e.g. not accepted by the flag states). Some authors argue that national CDEM rules and standards are legal as their extra-territorial effects are merely ‘incidental’ to and not the main aim of the requirements. But they stop short of elaborating on the meaning of the concept ‘incidental’. Others are more concerned with providing arguments in favour of the port

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216 The status of IMO Conventions is available at http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx.
217 See chapter 5, What is GAIRAS?
221 IMO Guidelines for ships operating in Polar Waters, supra note 123, paragraph G-2.1. Further construction and design standards are found in Part A of the guidelines.
222 Ibid, paragraph 1.2.
State for exercising jurisdiction «regardless of the location of the ship». Here several arguments are put forward: The nexus between the legitimate interests of the port State in areas beyond the port (e.g., fisheries), the necessity to regulate such activities, its absolute sovereignty over the port and the acceptance by the vessel of the proper notified requirements through voluntarily entering the port. Arguments with different legal basis are put together but do not necessarily mean that a holistic assessment is to be undertaken.

The reference to nexus may point to both the effects principle/doctrine to be addressed later in the paper and the right to enforce in port legislation concerning sovereign rights and jurisdiction of the state in its maritime zones. Ringbom on the other hand argues more in favour of navigational interests. He is sceptical to applying the incidental effect argument since vessels hardly may avoid national CDEM standards. Their adoption will subsequently restrict navigational rights. More focus should therefore be put on the limitations of port State jurisdiction, which may be found in their obligations under the IMO and ILO conventions as well as in principles of general international law. These assessments must be undertaken on a case-by-case basis to consider whether the rules and standards may violate explicit treaty obligations or otherwise undermine their object and purpose. The reasonableness test to be undertaken under general international law implies weighing the interests of port State versus the flag state or even the wider international community. If the issue at hand is closely linked in geographical or other ways to the port State, its exercise of jurisdiction will be more reasonable. Ringbom acknowledges that these limitations do not provide any fixed line between legal and illegal exercise of port State jurisdiction.

These differences of opinion reflect that the sovereignty of the port State is at stake. However, it may be questioned whether there are great differences of opinion. The reasonableness standard advocated by Ringbom includes the closeness/nexus of the port State to the issue at hand. If there is a strong nexus, the extra-territorial effects will be of an incidental character. It is obvious that the port State may not establish national CDEM rules and standards violating explicit obligations under IMO or ILO Conventions.

Application of the CDEM standards of the Polar shipping guidelines

The on-going work within the IMO on transforming the Polar Shipping Guidelines may involve the amendment of the SOLAS 74 and possibly other conventions such as the STWC 78. If successful these rules and standards may become generally international accepted in a few years’ time. Based on the discussions above, port State enforcement of these rules and standards may be uncontroversial. They will be applicable to vessels in international shipping through ‘Arctic waters’ and some of them will be only applicable to shipping in ice covered parts within these waters. These CDEM rules and standards would thus not be globally applicable. They would probably be applicable to include the vessels navigating in the northernmost part of the EEZ of mainland Norway as well as the territorial waters of Svalbard and Jan Mayen. But questions may still be raised on the right of port States to enforce such regional CDEM rules and standards in ports beyond their area of application (Arctic waters). If vessels calling at ports in southern part of mainland Norway were required to be polar-classed Norway would in reality use its port State jurisdiction to regulate Arctic shipping. This would not to the same degree be the case if these requirements were enforced in ports in the northern part of Norway or on Svalbard, situated within or near the ‘Arctic waters’. The port State naturally would only be competent to apply these norms to vessels actually operating in the relevant areas of the Arctic; in transit to/from these areas. It may in itself be a problem to establish which vessels this would include and what specific requirements (e.g. Polar Class) the vessel has to fulfil.

When these CDEM rules and standards are not (made) mandatory this becomes a relevant issue; particularly in respect of mainland Norway. The enforcement of these rules and standards by Norway would have obvious extra-territorial effects, which will not be incidental. Further, as SOLAS 74 would not include particular Arctic CDEM rules and standards another question would be if Norway undermined the purpose and object of the convention by applying the CDEM rules and standards of the Polar Shipping Guidelines to foreign-flagged vessels visiting its ports. Since these national requirements would be intended to promote Arctic maritime safety and are consistent with the non-binding requirements of IMO, it is doubtful if Norway would violate its obligations under the SOLAS 74. Further, as far as these vessels would be navigating through Arctic waters subjected to Norwegian jurisdiction or sovereign rights or in their proximity the port State would have adequate nexus to the subject matter.

However, it may be argued that some of the CDEM rules and standards of the Polar Shipping Guidelines already are part or reflective of SOLAS 74. As referred to above under section, 3.3.2 SOLAS 74 includes goal-based standards for bulk vessels and oil tankers, which are to be supplemented by classification societies (see section 3.4.2). The IASC unified requirements on polar class as referred to and used in Polar Shipping Guidelines (section 3.3.5) may be seen as such. The fact that they are referred to in an IMO instrument adds to their legitimacy.

225 Johnson, 2004 supra note 188, p.41-43.
227 Ibid.
229 Ibid., p. 229 and p. 372.
230 Ibid., p.380.
231 Polar Shipping Guidelines, supra note 123, Section 1.1 with references to definitions of “Arctic waters” in Section G-3.3.
It will be challenging – as already mentioned particularly for port States outside the region – to enforce the CDEM rules and standards since as these may vary in time and space. The rules and standards applicable to a vessel operating in southern parts of the region during the ice free summer season are radically different from those applicable to vessels operating all year-round in ice-covered areas. The port State necessarily needs information about both the vessel (including its next port of call as well as sailing route) and about the conditions in the areas where the vessel will operate in order to prevent arbitrary enforcement. It could be done by requiring vessels to give prior notification of their entry into port, including information on their next port of call. The LOS Convention does not include provisions on prior notification.

Further, the ship reporting systems (SRS) that may be adopted under the SOLAS 74 is not designed for vessels calling at ports. States may ask SRS to regulate shipping in particular maritime areas for safety and/or environmental protection purposes. In our context it would be more relevant to apply SRS to vessels navigating through whole or parts of the Arctic waters. Port state requirements must be based on the territorial principle. Under the EU Directive on Community vessel traffic monitoring and information system, also applicable to Norway the port State shall require vessels above 300 gross tones to notify within 24 hours before their entry into port by submitting information on their identity, port of destination, time of call and passenger number. The port State is not required to ask for information of next port of call or sailing route. Requiring vessel to provide such prior notice on their arrival is uncontroversial under the territorial principle. It is more questionable whether the port State may require information on the operation of the vessel after it has left port as it has extra-territorial consequences. Most vessels in international shipping are now required under SOLAS 74 to have equipment on board automatically transmitting information to port State as well as coastal States on their identity and position. In this context providing information on next port of call or sailing route does not seem to be an unreasonable burden.

Existing EU legislation may also be relevant for Norway as a port State to ensure safe navigation in the Arctic. The Community vessel traffic monitoring and information system has been amended also to provide for measures where ice conditions pose «... a serious threat to the safety of human life at sea or to the protection of their shipping areas or coastal zones, or of the shipping areas or coastal zones of other States...» These measures are primarily intended for the Baltic Sea. As they are of a general character they may also be applicable to Arctic maritime waters when made legally binding on Norway. It would be left to Norway to decide whether these requirements be made applicable to Svalbard. The obligation is primarily to inform vessels arriving or departing from port intending to navigate through ice covered waters about recommended routes and icebreaker assistance. The port State may «request» these vessels to document that it «... satisfies the strength and power requirements commensurate with the ice situation in the area concerned ». Thus there is not a requirement for vessels to call at port to be constructed, equipped or manned specifically for ice-covered areas. There are neither stipulated any consequences of a refusal to comply with such request or of non-compliance with such requirements. However, under the relevant recital «...the authority concerned should be able to take any appropriate steps to ensure the safety of human life at sea and to protect the environment.» This could mean refusal to access port or detainment of vessel in port. However, as will be seen the Port State Directive does not include any reference to vessels not satisfying requirements for operating in ice-covered areas. Still the amended directive may provide certain legality when applicable to Norway for taking measures in respect of vessels considered not seaworthy in ice-covered areas.

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232 SOLAS Regulation V/11 and guidelines on ship reporting (IMO Resolution MSC.43(64)).
233 2002/59/EC Article 4and Annex I(1).
235 SOLAS Regulation V-19 on Automatic identification system (AIS) and Long-range identification and tracking (LRIT) providing information on until 100 nautical miles off shore on identity, position and date and time of provided position.
Ban on entry of vessels carrying heavy oil as fuel or cargo

As earlier remarked the major concern in Arctic shipping is the accidental discharge of oil, which is not easily degradable. Tankers transporting heavy grade oil are required to have double hull under MARPOL 73/78 Annex I. Vessels using such oil as fuel may be navigating in Arctic waters. A ban on heavy grade oil as cargo as well as fuel has been adopted by the IMO for the maritime areas off Antarctica. A similar ban for Arctic waters has yet to be considered by IMO. A proposal may as referred to under section 3.3.4 be submitted by the Arctic states. An alternative may be for the Arctic states to apply for the establishment an Emission Control Area under MAPOL 73/78 Annex VI for the maritime Arctic, which involves stricter conditions for emissions of NOx and SOx. These limitations will also affect the type of fuel that may be used. The individual port State is competent to regulate the entry of tankers with heavy grade oil and the use of such oil as fuel while in port. Under MARPOL 73/78 the port State may ban single-hull tankers, access to its port. This specific right of the port State is not to be interpreted as restricting the port State jurisdiction under general international law. The port State may still ban the call of vessels carrying heavy grade oil even if it is double-hulled. A ban may be based on the territorial principle although it will have extraterritorial effects. As the objective will be to prevent pollution of the marine environment of the port State there is sufficient nexus to the port State to adopt such measures.

4.2.3 Operational requirements

The legislative jurisdiction of the port State may also include operative requirements; legal norms regarding the activity or behaviour of the vessel and its crew. They could include requirements on discharges/emissions from vessels, their navigation and other operational aspects. The discharge regulations may involve operational and accidental discharges. Navigational regulations span from reporting/notification obligations to anchoring, pilotage, mandatory routing systems, vessel traffic services, traffic rules and to maritime accidents.

In the following, these issues are discussed: regulation of vessels carrying heavy oil as fuel or cargo, the legal basis of port State jurisdiction over discharges in areas beyond its jurisdiction and principles of jurisdiction.

Discharges and extra-territorial jurisdiction: LOS Convention Article 218

What is primarily associated with port State jurisdiction is where it regulates in respect of activities occurring in areas beyond its territory. It may exercise criminal jurisdiction by defining some acts illegal or it may instruct a vessel to behave in a certain matter (e.g. to accept intervention in cases of maritime casualty. In legal theory there seems to be consensus that the port State need a particular legal basis to exercise jurisdiction for activities beyond its territory. One exception seems to be Johnson. She argues that the acceptance of the vessel by voluntary entering into port is decisive for the right of the port State to exercise extra-territorial jurisdiction. However, this cannot be correct as the vessel and its crew is not capable of foreseeing port State jurisdiction.

The LOS Convention Article 218 is an example of how treaty law may provide port States with extra-territorial jurisdiction. The port State is provided with enforcement jurisdiction in respect of discharges of a foreign-flagged vessel on the high seas and in the maritime zones of other states. This right presupposes a concurrent prescriptive

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240 See the Norwegian paper on environmental issues concerning environmental aspects of a possible Polar Shipping Code, DE 54/13/7 Development of a Mandatory Code for Ships operating in Polar Waters.


242 MARPOL 73/78, Annex I, Regulation 20.8(2).


jurisdiction. This legislative jurisdiction is not absolute. The port State may only exercise jurisdiction over vessels in respect of discharges in the maritime zones of other state on the request of the relevant coastal State, the flag state or a third state affected by the discharge. The port State may exercise jurisdiction independently if the discharge is threatening with or has caused pollution in its maritime zones.

The port State is neither free to define what discharges are illegal as its jurisdiction is limited to discharges, which violate «...applicable international rules and standards established through the competent international organization...». The concept «applicable» is referring to the legal norms (rules and standards) that are directly operational in the relationship between the port State and the flag State (through treaty or custom) as well as the legal norms referred to by the use of «generally accepted international rules and standards» in inter alia Article 211(5) of the LOS Convention. For practical purposes these norms are included in the Annexes of MARPOL adopted through the IMO.

The port State is as formulated by Tan not provided with «substantive prescriptive authority». Consequently, Norway would not be competent under Article 218 to adopt and enforce legislation applicable to the maritime zones of other Arctic coastal States or the high seas of the Arctic Ocean, which are stricter than the applicable international rules and standards. If a special convention for the protection of the Arctic marine environment was to be adopted, illegal discharges from vessels under the convention would be enforceable under Article 218 to the extent both the port State and the flag State are parties to the convention or the norms.

Where a foreign-flagged vessel present in a Norwegian port is suspected of discharges on the high seas of the Arctic Ocean or in maritime zones of other Arctic coastal States of the region the extra-territorial jurisdiction under LOS Convention Article 218 or general international law may be applicable. Both Russia and Canada have adopted stricter standards for discharges in their maritime zones than MARPOL referring to Article 234 of the LOS Convention as legal basis. Although these standards may be consistent with the Article 234 questions may be raised whether the port States are competent to legislate and enforce in respect of these standards. The situation would arise if Russia requested Norway under Article 218(3) to undertake investigations in respect of a vessel in port for violating its discharge standards. The jurisdiction of the port State are related to «... applicable international rules and standards established through the competent international organization», Article 218(1). These rules and standards would presumably be those included in MARPOL 73/78. Hence, Norway would not be competent to adopt stricter discharge standards even if they are legally established under Article 234. If these stricter discharge rules and standards were adopted as part of the special area status of Arctic areas under MARPOL Annexes I, II and V or control emission area under MARPOL annex VI the port State jurisdiction under Article 218 would be applicable. The port State jurisdiction may also include exchange of ballast water, not regulated through MARPOL but the 2004 Ballast Water Convention. Questions may be raised whether it qualifies as pollution under Article 1 of the LOS Convention and thus effect the jurisdiction of the port State. The 2004 Ballast Water Convention includes provision on port State enforcement, which will not be dealt with here. Alternatively, the port State may exercise jurisdiction in respect of the vessel based on the effects doctrine discussed below. It might be difficult for the port State to prove considerable effects of ballast water exchange in its maritime zones.

Since Norway has not established a full EEZ around Svalbard the maritime waters beyond the 12 nautical miles territorial sea qualify as the high seas in terms of international shipping. Still, Norway may exercise port State jurisdiction over discharges in this area (being high seas) and in maritime zones of other Arctic coastal States violating rules and standards of MARPOL Annexes under Article 218. If the discharges in the maritime zones of other Arctic states have caused or are likely to cause pollution in the maritime zones of Norway, Norway may exercise port State jurisdiction irrespective of any request from the relevant port State. It may involve discharges in Russian EEZ or territorial sea spreading pollution to the EEZ of mainland Norway or the territorial sea of Svalbard.

247 LOS Convention, Article 218(1). 
250 Tan, 2006, supra note 38, p. 219. 
251 See chapter 6 for more detailed presentation of their legislation.

252 See note 104 for references.
Discharges and extra-territorial jurisdiction: Principles of jurisdiction.

The question is whether principles of jurisdiction under general international law may supplement the legal basis for port State jurisdiction. McDorman argues that Article 218 exhaustively regulates the jurisdiction of port States over discharges on the high seas or in the maritime zones of other states. He thereby does not exclude that these principles may provide the port State with jurisdiction in respect of other types of violations on the high seas. Molenaar argues that since Article 218 is not based on the effects principle the LOS Convention is not an obstacle to the port State applying in the exercise of extra-territorial jurisdiction. However, enforcement actions would be subjected to the safeguards of part XII of the LOS Convention. Nevertheless, the port State is evidently restricted to apply the same discharge standards as in its own maritime zones. The question is then whether this leads us any further than the rights of the port State under Article 218(2) to take enforcement measures when the discharges have or are likely to have effects in the maritime zones of the port State. The suggestion by Ringbom that principles of jurisdiction under general international law may provide legal bases for exercising jurisdiction for conduct that is not regulated through the LOS Convention seems to meet these concerns.

In addition to regulating other types of conduct than discharges, the jurisdictional principles under general international law could provide the port State with jurisdiction over discharges from vessels flying the flag of non-contracting parties to the LOS Convention as Article 218 probably is not reflecting customary international law. These principles indicate different types of nexus between the state exercising jurisdiction and the object over which jurisdiction is exercised.

The purpose here is not to give in-depth analyses of relevant principles but an overview. They include the universality principle, the personality principle, protective principle, effects principle/doctrine. The universality principle is reserved for the most heinous crimes and in the law of the sea it is applicable to piracy. The personality principle may be seen as reflected in the flag state jurisdiction, as the vessel acquires the nationality of the state which flag it is entitled to fly. More relevant is probably the protective principle whereby the state exercises jurisdiction over activities of foreign citizen in areas beyond the territory, which is prejudicial to the state security.261 The principle was arguably the legal basis for the Canadian Arctic Waters Pollution Prevention Act and the US Oil Pollution Act. As the principle is related to the protection of sovereignty and right to political independence it is arguably not relevant basis for ensuring maritime safety or protection of the marine environment. The abovementioned Canadian Act may also be based on Article 234 of the LOS Convention. The principle of objective territorial jurisdiction applies when a constitutive part of the activity has been completed in the territory of the state exercising jurisdiction while it was initiated in areas beyond. The difference from the effects principle or doctrine is that under the latter, there is not a requirement of intent but the consequences are required to be foreseeable and considerable. It may thus be easier for the port State to use the effects principle or doctrine as legal basis. But its legal status as well as applicability to environmental law is debated. A practical example of its application is pollution of the EEZ or territorial sea of the port State originating from discharges of a foreign flagged vessel while on the high seas or in the maritime zone of another state. What standards should be applied by the port State when prescribing the norm? A requirement of manifest effects for the port State to be competent to regulate means that setting stricter standards than MARPOL 73/78 probably would not help.

The question is then what the effects principle would add. It would provide the port State legal basis where Article 218 is not applicable.

Other activities and extra-territorial jurisdiction

Article 218 does not provide port State jurisdiction over other types of unwanted activities on the high seas or in the maritime zones of other states. There may be need of establishing obligatory ships routeing systems on the high seas and in maritime zones of Arctic coastal States to ensure safety of navigation through ice covered areas. Such regulations may also include areas to be avoided, preventing navigation through particularly vulnerable areas. These regulations may be adopted unilaterally by the coastal State in respect of the territorial sea and in ice covered areas of the EEZ under LOS Convention Articles 22 and 234 respectively. Ships routeing systems may also be adopted through the IMO under the SOLAS and COLREG Conventions for these zones and the high seas. The coastal State is competent to adopt legislation implementing these IMO regulations for its territorial sea and EEZ. A foreign-flagged vessel having violated...

254 Ibid.
257 Molenaar, 2007, supra note 211, p.236.
259 LOS Convention, Article 105.
260 LOS Convention, Article 91(1); Lowe, op.cit., p.340.
261 Cedric Ryngaert, Jurisdiction in International Law, Oxford...

266 SOLAS 74, Chapter V, Regulation 10.
267 See chapter 5.
obligatory ship routeing systems while sailing through the territorial sea or the EEZ making a call at port in the coastal State is subjected to its enforcement jurisdiction under LOS Convention Article 220(1). The port State is not competent under LOS to legislate in respect of violations of navigational regulations on the high seas or in the maritime zones of other coastal States. Neither the effects doctrine would provide the port State jurisdiction as the navigation as such does not have any effects on its maritime zones. The same would apply if the vessel has not provided adequate reports to the port State on arrival while in areas beyond its jurisdiction (unless it has territorialized the requirement).

Alternative legal basis: Territorializing the conduct of the vessel

The port State may avoid exercising extra-territorial jurisdiction by what may be described as ‘territorializing’ the conduct of the vessel. It may condition the access to its ports with the compliance with certain norms of conduct applicable throughout the whole voyage of the foreign flagged vessels. If these are not complied with when the vessel arrives in port, the exercise of jurisdiction would be based on the territorial principle. Such a norm could be the obligation to keep a record book as stipulated under MARPOL 73/78. If there are discrepancies between the information from the inspection of the tanks and the oil record book the port State may take action. Then it is not the discharge itself that is regulated but the use of the falsified oil record book when entering the port.

4.3 Enforcement

4.3.1 General

Enforcement is the realization of the legislative jurisdiction. What measures may be taken by the port State to enforce rules and standards depend on the legal basis of its jurisdiction. They may include administrative measures as well as criminal proceedings.

The port State control aimed at ensuring compliance with internationally accepted CDEM rules and standards primarily involves administrative measures in phases: boarding and (initial, detailed or extended) inspection, ordering the master/owner to rectify deficiencies and the detention of non-seaworthy vessels. The port State is arguably competent to initiate criminal proceedings in respect of violations of CDEM rules and standards. But such enforcement jurisdiction is not normally applied as detention is considered as an effective measure.

Molenaar argues without going into details that the competence of the port State to enforce unilaterally adopted CDEM rules and standards are more limited. Enforcing internationally agreed norms have higher legitimacy. This is particularly the case when they have extra-territorial effects. On the other hand, the unilaterally adopted measures as well as the internationally agreed measures are based on sovereignty over the ports. Therefore, Ringbom is less inclined to restrict the types of enforcement measures applicable to unilaterally set measures. However, referring to state practice, he points out that these measures usually are «less rigorous» enforced.

4.3.2 Criminal proceedings

Criminal proceedings overlap with the administrative in the sense that they include the same measures such as boarding and inspection of the vessel. The purpose is however to investigate suspected violations of port State legislation involving possible criminal liability. Further, the criminal procedures may include the detention of the vessel and crew as part of the investigation and sanctions if violations are established. Sanctions may include as monetary or other penalties (e.g. imprisonment and confiscation of vessel). Criminal proceedings are primarily relevant in respect of vessels involved in discharges on the high seas, in the maritime zones of other states and in its own maritime zones violating the legislation of the port State established under LOS Convention Articles 218 and 220(1) respectively. Under Article 220(1) the port State or more correctly the coastal State may be provided with competence to enforce violations of other types of operational requirements it has adopted for its EEZ and territorial sea (e.g. obligatory sea lanes or reporting obligations) as far as they are consistent with the LOS Convention. Criminal proceedings may also be initiated as far as the port State has adopted legislation exercising extra-territorial jurisdiction under general international law, preferably the effects principle. The port State is not explicitly obligated under the LOS Convention to take these enforcement measures but is primarily provided with a right or competence to take such measures. However, the 2005 EU Pollution Sanctions Directive implies enforcement obligations for Norway as it is included in the EEA Agreement. Under Article 6 the port State is explicitly obligated to investigate suspected violations of port State or more correctly the coastal State may be provided with competence to enforce violations of other types of operational requirements it has adopted for its EEZ and territorial sea (e.g. obligatory sea lanes or reporting obligations) as far as they are consistent with the LOS Convention. Criminal proceedings may also be initiated as far as the port State has adopted legislation exercising extra-territorial jurisdiction under general international law, preferably the effects principle. The port State is not explicitly obligated under the LOS Convention to take these enforcement measures but is primarily provided with a right or competence to take such measures. However, the 2005 EU Pollution Sanctions Directive implies enforcement obligations for Norway as it is included in the EEA Agreement.
to undertake «an appropriate inspection», if it has information that a vessel has discharged polluting substances (those regulated through Annexes I or II of MARPOL 73/78) in maritime zones of EEA members (EU member States, Norway and Iceland) or on the high seas. If the investigation concludes that the vessel has been involved in an ‘infringement’ (as defined in Article 4: discharge committed with intent, recklessly or by serious negligence) the port State shall notify the flag state and the relevant member State (where the discharge took place). The EEA member States are under Article 8 required to take necessary steps to ensure that the infringements are subject to criminal and/or administrative penalties that are «effective, proportionate and dissuasive». These alternatives presuppose that the LOS Convention also provides for administrative penalties. However, the port State is not explicitly obligated to take further criminal proceedings leading to such penalties. As the EEA member States as stipulated in Article 9 are to apply the provisions of the directive in accordance with applicable international law and in particular with the LOS Convention it is natural to read the competence of the port State in the context of its Article 218.

Article 6 of the Pollution Sanctions Directive should be read as a right and obligation for the port State to investigate discharges in maritime zones of other member States without their explicit request as required under Article 218(3). Their request is implied through the directive. But in respect of discharges in maritime zones of third states their request under LOS Convention Article 218(2) naturally is required before Norway may under take investigation on board the vessel. Under LOS Convention Article 218(2) the port State may neither take further criminal proceedings as stipulated in Article 218(1) in respect of discharges in maritime zones of other states without their request. As the port State is required to inform the relevant EEA member State and flag state about outcome of investigation it is natural to read this as leaving to either of them to decide whether the port State shall proceed with the criminal proceedings or whether they shall use their right to intervene and assume responsibility for the criminal proceedings as entitled to under LOS Convention Article 218(4) and Article 228(1) respectively. Under Article 10 of the Directive the member States are required to cooperate on the establishment of information systems that inter alia may provide for necessary communication between port State and relevant member (coastal) state. These requests are not required for the port State to take further criminal proceedings when discharges are likely to cause pollution in the maritime zones of the port State or have occurred on the high seas.

4.3.3 Enforcement measures: Refusal of access

Refusal of access to port is another type of enforcement measure the port State may take in respect of foreign-flagged vessels violating its legislation. This measure is particular relevant where the legal basis for exercising jurisdiction is weak; e.g., where the alleged illegal activity has occurred on the high seas or in the maritime zones of other states without having any effects in the maritime zones of the port State. This would be the case where a vessel has not complied with mandatory shipping routing systems established through IMO or by the relevant coastal State in the Arctic Ocean.

The port State is not provided with a right under the LOS Convention to deny vessels access. Such right is based in general international law (as discussed above under section 4.1.2 whereas the port State is competent to set conditions for the entry of foreign-flagged vessels may also deny them access. When a vessel is refused access due to activities illegal under the legislation of the port State in areas beyond its jurisdiction it is still exercising territorial jurisdiction. Refusal of access to port has increasingly become part of regional PSC schemes, primarily the Paris MoU, aimed at ensuring compliance with international agreed CDEM rules and standards. It is not at least due to the interaction with EU maritime safety legislation. First vessels not complying with requirements for repairs could be refused access. The measure was later extended from vessel performance to also include the performance of flag state. Vessels flying the flag of states black-listed by the Paris MoU shall be issued a refusal order at the third detention if it has been detained twice the last three years. Vessels flying the flag of state on the grey list having been detained twice in last two years shall also be issued with the refusal order when leaving port after their third detention. The black, grey and white lists are developed on the basis of the total numbers of inspections and detentions in the Paris MoU are during a continuing three year period. The flag states with the poorest performance are blacklisted, those with average performance is blacklisted and those with quality performance are white listed. The refusal may be lifted after a period of time if the vessel provides adequate information on rectification. Repeated refusals may lead to longer duration of refusal or even a permanent refusal. This is also described a priori

824 Directive 2009/16 Article 16(1) and Annex VIII paragraph 1.
826 Directive 2009/16 Article 16(2)-(4).
banning as the vessel are informed on their future calls at port in Europe. Ringbom describes these procedures for refusal as being «routine fashion». In contrast to the Paris MoU he also makes a distinction between ‘refusal of access’ and ‘banning’ of vessels and reserving the first-mentioned to situations where the measure is linked to the behaviour of or the state of the individual vessel and the second relates to groups or categories of vessels that are not accepted to enter the port. It should be noted that the PSC Directive uses the refusal of access concept on the cases denoted as banning. A prominent example of refusal of access is single-hull oil tankers not allowed to enter any port in the EEA area after the age criteria have been met. Vessels transporting or using heavy grade oil as fuel would fall in the same category when not allowed to port.

In our context, not permitting vessels inadequate ice classed vessels operating in Arctic to access ports in Norway would fall within the first category of Ringbom. But is there a need for such distinction? The legal basis for denying access to port is the same as well as the limitation to port State jurisdiction under international law. But as pointed out as the vessel itself has no deficiencies it could be an argument in favour of the port State to substantiate its decision. The general obligations under international law would also help. The requirement of non-discrimination under the LOS Convention Article 227 is applicable since the refusal concerns the protection of the marine environment. The port State should have an objective reason to treat similar vessels differently. A requirement of proportionality is more relevant in cases where vessels are banned due to substandard quality where the question is whether the ban is proportionate with the objective sought achieved. The need for safeguards may be stronger in the latter cases.

4.3.4 Safeguards
The exercise of enforcement jurisdiction of the port State may be subjected to restraints under the safeguards of section 7 of Part XII under the LOS Convention and general international law (particularly proportionality, non-discrimination and abuse of rights as referred to above under section 4.1.2). Although states enjoy full jurisdiction over foreign flagged vessels they normally refrain from exercising enforcement jurisdiction in the internal affairs of the vessel. This area of autonomy has been gradually limited in recent years, not least within maritime safety and marine environmental protection. The restraints of Section 7 will be addressed first. Questions may be raised on the applicability of these provisions to the different enforcement measures taken by the port States. First, these safeguards apply to enforcement measures taken to protect and preserve the marine environment, which is the primary objective of LOS Convention Part XII. Enforcement measures in respect of illegal discharges as stipulated in Article 218 is an example of measures to which the safeguards are applicable. Measures taken to enforce navigational regulations or of CDEM rules and standards fall to a large extent within the purpose of Part XII of LOS Convention. This may be illustrated by some of its provisions. Among the measures states shall take to protect and preserve the marine environment in addition to regulating vessel-source pollution is the regulation of «...design, construction, equipment, operation and manning of vessels», Article 194(3)(b). In Article 211(1) further detailing the obligation to prevent vessel source pollution ship routing systems are indicated as one measure. Finally, in Article 219 there is a clear link between seaworthiness and prevention of pollution. In conclusion there is no clear distinction between protection of the marine environment and maritime safety. But as rightly observed not all safeguards are applicable to these enforcement measures. It will depend on the reading of the individual provision.

But are the safeguards applicable to the enforcement measures which are based on general international law and not on the LOS Convention? This is the case where the port State or a group of port States establish national legislation. The condition for the application of the safeguards is that the legislation sought enforced falls within the purpose of Part XII as discussed above. To what extent the safeguards are applicable will depend on the interpretation of the individual provision. Ringbom argues the safeguards provisions are not necessarily limited to those enforcing general internationally applicable measures with explicit bases in the LOS Convention.

The safeguard provisions can be divided into two groups: First, the general restrictions applicable to most types of enforcement measures and irrespective of their occurrence and second the restrictions with limited application.

The general restrictions include duties during the exercise of enforcement (Article 225), the obligation to notify flag state and other concerned of the enforcement measures.

287 Molenaar, 2007, supra note 211, p. 229.
290 EEA Agreement, Annex XIII/V. No. 56m.
293 Ibid.
taken (Article 231), an obligation not to discriminate in form or fact between foreign flagged vessels (Article 227), the right to institute civil proceedings parallel to the enforcement (Article 229) and state liability for unlawful or disproportionate exercise of enforcement (Article 232).

Several of the safeguards such as state liability (Article 232) are explicitly linked to enforcement measures taken under section 6 (Articles 213-222). The question is then whether they may be used in respect of measures based on general international law. State liability is described as a hybrid between State responsibility and civil liability. State liability is a primary norm and it is questionable whether it is applicable beyond its wording. Concerning the obligation to notify the flag state and other concerned states such obligation is certainly part of general international law. However, states may incur state responsibility for violating their international obligations, including an obligation to remedy the losses of the counter-part. In the end the difference between the concepts is necessarily not wide. The obligation under Article 225 to avoid threats to maritime safety and the environment during the enforcement necessarily have to be read in context with the restrictions under general international on in the use of force (reasonableness and proportionality).

The safeguards with limited application deals with how the investigation of foreign vessels is to be conducted (Article 226), intervention by flag state or concerned coastal State in the criminal proceedings (Article 228) and penalties (Article 230). Article 226 is two-parted: The first includes inter alia the proceedings taken by the port State in regard of illegal discharges under Article 218 (Article 226(1) (a) and (b)) while the second relates to substandard vessels. The requirements of the port State (as well as the coastal State) are to ensure proportionality both as to the mode and length of the investigation and consequently the detention. The investigation is started by examination of certificates and physical inspection of vessel may first be undertaken if there are «clear grounds» for believing that the conditions of the vessel are not consistent with the certificates or the certificates do not provide adequate information regarding the suspected violations. If the investigation concludes with a violation the vessel are to be released promptly against bond or other financial security. If the port State does not comply with the requirement of prompt release, the flag state may initiate the procedures under Article 292 eventually involving the International Tribunal for the Law of the Sea.

The obligation of prompt release is not applicable in cases with substandard vessels if they may represent an «unreasonable threat of damage to the environment», Article 226(1) (c). It may be detained or instructed to go to nearest port for repairs. The flag state may seek release under Article 292.

The question is whether these requirements are applicable where the enforcement measures of the port State are based on general international law. It is natural to read the reference in Article 226(1) (a) to Articles 216, 218 and 220 with its close link to Article 226(1)(b) to mean that these safeguards are reserved for enforcement measures taken under these provisions. Although Article 226(1) (c) obviously is linked to Article 219 on port State obligations on substandard vessel there is no explicit reference. Therefore, this safeguard obligation is applicable where the port State is detaining vessels based on national legislation on CDEM rules and standards. The obligation in Article 226(1) (a) on the mode and duration of investigation is reflective of a principle of proportionality under general international law. Although it is more general in format the principle restricts the port State discretion as to how the investigation is conducted and its duration. The practical implication of the non-applicability of Article 226 is that the flag state cannot invoke the prompt release procedures under Article 292 but is left to apply provisional procedures under Article 290.

The port state or the concerned coastal State may intervene when the port State has started criminal proceedings under Article 218(4) and Article 228(1) respectively. The reference to section 7 in Article 218(4) suggests that the flag state has the priority. However, the port State is not required to comply with the request of the flag state if the violation of the vessel has caused «major damage to the coastal State» or the flag state has «repeatedly disregarded its obligation to enforce». The concept 'coastal State' used in this context includes the port State where the violation is to have been committed in its EEZ (beyond its territorial sea) or where the violation has been committed in the maritime zone of another state and the port State are exercising jurisdiction under Article 218. The threshold 'major damage' is identical with the right of enforcement in the EEZ under Article 220(6). However, the wording of Article 228 suggests that it is applicable where the port State exercises jurisdiction under Article 218 or the effects. If such extra-territorial violations were to cause pollution in the territorial waters or internal waters of the port State, the rights of the flag state would not be applicable even when the damage did not qualify as major.

The port State is only competent to impose non-mandatory penalties for violations of its legislation under Article 230(1). This also includes violations of national legisla-

297 See section 4.2.2.
299 Ringbom, 2008, supra note 15, p.278-279 seems to presume that Article 226(1) (a) is applicable to Port State Control of CDEM rules and standards. However, the provisions referred to in Article 226(1)(a) are not related to such.
300 LOS Convention, Article 228(1).
tion, not adopted to implement general applicable rules and standards. One exception is where the port State has been requested to take criminal proceedings under Article 218(2) in respect of illegal discharge in the internal waters or wilful and serious pollution in the territorial sea of another state, Article 230(2).

As indicated in the taking of enforcement measures the port State is also restricted by obligations under general international law. Most relevant are the obligation of non-discrimination and the duty to apply the enforcement necessary to achieve the objective and measures that are proportionate. In the ports of Svalbard the non-discrimination principle applies in the enforcement also in respect of Norwegian flagged vessels. A requirement of proportionality suggests that the port State should follow the same procedures as stipulated in the LOS Convention Article 226(1): start with inspection of certificates and undertaking more extensive investigation of the vessel only when there are well-founded grounds for suspicion that the vessel is in violation of its legislation. Further, the vessel should be detained only as long as necessary to confirm/disconfirm the suspicion. This provides the port State with certain margin of appreciation; particularly concerning seaworthiness and whether it is safe to let the vessel sail.

The refusal of access to port is obviously an exercise of territorial jurisdiction. It is argued that a decision of the port State to refuse access; either ad hoc or a priori is subjected to legal standards such as abuse of rights and non-discrimination. The procedures adopted through the Paris MoU and made legally binding on Norway through the PSC directive provides for procedures when vessels are refused access to ports including a right to appeal and lifting of the decision when the deficiencies are rectified. The criteria set in order for the port State to adopt an order are aimed at preventing arbitrary decisions. They are partly based on flag state performance, obviously aimed at forcing the flag state to comply with its responsibilities. As it is based on registration of all vessels controlled in European ports during the last three-year period there are some guarantees that the refusal is not based on the nationality as such. Further, Ringbom argues that the reasonableness assessment also includes the linkage of the port State to the interests it seeks to protect. In cases where vessels are not confirming to generally accepted CDEM rules and standards such link is obvious. It might not be the same concerning national rules and standards. Refusal of access to port of vessel with inadequate ice class is more reasonable in a port at Svalbard than in a port of continental Europe or even mainland Norway. In any case such norms would to be balanced against the territorial jurisdiction of the port State.


303 PSC Directive Article 20 and Article 16(2) and Annex VIII.

4.2. Assessment

The discussions so far document that the Norway has extensive competence to regulate the access of foreign flagged vessels to and their stay in port in mainland Norway and on Svalbard when navigating to, from or in Arctic waters. It relates primarily to applying static requirements, to the construction, design and manning of the vessels. Consequently Norway would in general be competent to require vessel visiting its ports heading for Arctic waters to comply with the CDEM standards stipulated in the Polar Shipping Guidelines. The right to regulate the operation of the vessel while in areas of Arctic waters beyond its territorial jurisdiction is limited. This primarily relates to discharges made by the vessel and is explicitly provided for in LOS Convention Article 218 or in general international law as far as the discharges causes negative effects/pollution in the maritime zones of Norway. An alternative is to refuse vessels not considered seaworthy in Arctic waters or which have been involved in undesirable activities in Arctic waters to call at ports in Norway.

Although entitled to adopt static regulations and to enforce them, their legitimacy may be weak. It is especially the case the further away from the Arctic water the port State exercises such jurisdiction. Here the requirements primarily will have effects beyond the territory of Norway and will infringe on the jurisdiction of the flag state. Legal basis in international agreements will provide the port State measures with legitimacy. That is the case if the Polar Shipping Guidelines are incorporated into the relevant IMO legal instruments becoming binding on almost all the merchant tonnage. If this is not successful an alternative is for the Arctic coastal States to establish a regional agreement on the basis of Article 234 on setting common CDEM rules and standards and operational requirements (e.g. discharges) for vessels navigating through their maritime zones. It will strengthen the basis for them as port State to set such requirements.

Irrespective of whether the Polar Shipping Guidelines are made legally binding and mandatory to vessels operating in Arctic waters Norway would have problems applying them effectively to foreign flagged vessels under the present port State control regime. If applied unilaterally by Norway vessels may easily escape these rules and standards by calling at ports in other states. As correctly pointed out by Boyle that such action is «…only effective if others also follow the lead.» Chircop is of the same opinion arguing that «…These standards must be reasonable and widely supported, because shipping is an international business with multifarious players.»

Further, Norway would also be dependent on more information about the operation of the vessels in Arctic waters and the conditions of these waters to apply them to visiting vessels. In order to ensure compliance with these regional applicable rules and standards (mandatory or not) cooperation between the relevant Arctic states on port State control is needed. The existing port State MoUs may not be adequate to deal with the polar guidelines. In order to be included in the MoUs the polar guidelines have to become legally binding by incorporation into relevant IMO and ILO Conventions. If they are not made mandatory through these instruments the Arctic coastal would have to set up their own scheme. As most Arctic shipping is destination probably cooperation between the Arctic port States would be more effective. But in order to control trans-arctic shipping; vessels not calling at ports in Arctic the Paris and Tokyo MoUs should be involved.

305 Alan E. Boyle, 2006, supra note 189, p.16.
5. Norway as a Coastal State

5.1. Overview

The objective here is to present and assess possible measures that can be addressed by Norway as a coastal State in the Norwegian maritime zones to ensure maritime safety and to protect the Arctic marine environment against.

An overview of the different maritime zones of Norway is provided above in chapter 2. The aim in this section is to examine the coastal State jurisdiction to legislate and enforce regulations that address the particular risks that vessels operating in the Arctic are exposed to and to protect the marine environment of the Arctic from the impacts of shipping. The research questions will be more specifically identified in the subsections. In section 5.2 the coastal State jurisdiction to legislate both in respect of CDEM requirements and operational requirements are examined. Following this the coastal State jurisdiction to legislate in respect of measures for the protection of the environment such as emissions and discharge standards is investigated in section 5.3. Also other measures for protection of the marine environment are examined in this section, such as the competence to regulate in respect of ballast water discharges and regulation of shipping within ice-covered areas. In marine environmental law, there has in the last decades been a focus on protection of the oceans as a whole. This includes requirements to take an ecosystem approach to the ocean management and to apply area based management measures. The possibility for the coastal State to adopt area based measures for the protection of certain areas of the marine environment from the impacts of shipping, such as marine protected areas (MPAs) under the Convention on Biological Diversity (CBD), special areas under the MARPOL 73/78 and Particularly Sensitive Sea Areas (PSSA) is addressed in section 5.4. Following this it is investigated what measures/actions the coastal State may/shall take for preventing or remediing environmental harm in case of an accident in section 5.5. Finally, the enforcement jurisdiction of the coastal State is addressed in section 5.6. The analyses in this chapter include both measures that the coastal State may adopt unilaterally and measures that only may be adopted through IMO.

5.2. Regulation of maritime safety and environmental protection

5.2.1. General

Regulations on maritime safety and environmental protection are primarily developed and adopted by IMO (International Maritime Organisation). The purpose of IMO is to improve maritime safety and to prevent and control marine pollution from vessels. To achieve this, numerous of IMO standards and regulations have been adopted by IMO. An overview of the role of IMO and of the most important IMO instruments is provided above in 3.2 and 3.3. In this section the requirements that may be adopted by Norway as a coastal State for vessels operating in the Arctic will be addressed. First regulations relating to CDEM standards, which include requirements to the construction, design, equipment and management of vessels, are addressed, then possible operational/navigational regulations such as routeing and (ship) reporting systems will be addressed.

5.2.2. CDEM requirements

General

With CDEM standards it is meant standards dealing with construction, design, equipment and manning of vessels that aim to prevent or minimise the pollution of vessels by improving the safety of vessels and thereby minimise the risk of oil spills from accidents and by reducing the operational vessel source pollution. References to CDEM standards are made in the LOSC such as in Article 21(2) where it is stated that the coastal State may not adopt laws and regulations that apply to the «… design, construction, manning or equipment of foreign ships…» LOSC does not, however, include any CDEM standards. CDEM standards are developed and adopted by IMO in various IMO instruments both legally binding and non-binding instruments, the most important being SOLAS 74, MARPOL 73/78, STWC, LL Convention and the Polar Guidelines. An overview of these IMO instruments is presented above in section 3.3. As the available CDEM standards and the most significant IMO instruments are presented above, this section focuses on particular questions with regard to legislation of CDEM standards by the coastal State. The objective of this section is to examine the scope of the legislative jurisdiction of the coastal State to legislate in respect of CDEM standards.

A key question in relation to the prospects of increased possibilities for shipping in the Arctic is whether the existing CDEM standards are adequate to facilitate shipping in the vulnerable environment and the difficult navigation conditions for vessels navigating, or if there is a need for other and stricter CDEM standards for vessels.

307 The notion of ecosystem approach and the use of marine protected areas is i.a. included in the 1992 Convention on Biological Diversity and the 1992 OSPAR Convention.

308 IMO Convention, Article 1.

309 For a discussion on CDEM standards see Molenaar, 1998, supra note 14, p. 23–24.
operating in the Arctic than elsewhere? Regulations that require a higher level of standards to the construction, etc. for vessels navigating in the Arctic, or special standards that are tailored to the Arctic ice and weather conditions, could be effective to minimize the risk of accidents and to reduce the operational pollution in the Arctic. This question is however, not discussed in the further as it is not a merely a legal question but rather a technical and scientific question.

Coastal state jurisdiction to legislate in respect of CDEM requirements

Within internal waters, coastal States may adopt any national legislation to ensure maritime safety and environmental protection, including also CDEM standards. In the territorial sea, coastal States may legislate the innocent passage for the purposes provided for in Article 21(1) such as the safety of navigation and preservation of the environment. There are however, significant limitations in international law in the sovereignty and the jurisdiction of the states to adopt and enforce CDEM measures. The legislative jurisdiction of the coastal State in the territorial sea is limited according to LOSC Article 21(2) with regard to CDEM standards. Article 21(2) provides that national laws and regulations «shall not apply to the design, construction, manning and equipment of foreign vessels unless they are giving effect to «generally accepted international rules and standards» (GAIRAS). This means that a foreign vessel is not bound by a national law and regulation concerning CDEM standards which does not give effect to an international rule and standard that is «generally accepted», that has the status of GAIRAS.

The reasoning for the limitation in international law on what regulations coastal States may adopt on CDEM standards is the international character of shipping as an international industry. International uniform regulations are necessary, as it would be impossible to adapt to different regulations on equipment and construction during the voyage through different maritime zones. Moreover, global uniform standards that are applicable everywhere provide legal certainty and equal costs within the maritime industry. It is therefore held that global, uniform regulations are preferable to ensure maritime safety and to minimize or prevent vessel source pollution or other damage on the marine environment. Consequently, whereas the port State jurisdiction opens for the adoption of CDEM standards for vessels voluntarily in port as discussed above in section 4.2.2., the coastal state jurisdiction is much more limited under international law both in the territorial sea and in the EEZ. In order to define the legal scope of the jurisdiction of the coastal State to adopt CDEM regulations it is necessary to determine what a CDEM standard is and when such a regulation is «generally accepted» and qualify as GAIRAS.

What is GAIRAS?

A significant legal question when determining the scope of the coastal State jurisdiction to adopt CDEM requirements is when such regulations qualify as GAIRAS and therefore may be adopted by the coastal States and made applicable to foreign vessels in the territorial sea and in the EEZ. In relation to regulation of shipping in the Arctic, a particular question is the status of the Polar Guidelines adopted by IMO. May these Guidelines be seen as GAIRAS or develop into GAIRAS and be adopted and made legally binding upon vessels navigating the maritime zones of the Arctic coastal zones?

To determine what a GAIRAS is it is first necessary to determine what the term «international rules and standards» means. The term «rules» is natural to understand as a legally binding rule, which may be adopted in treaties or be part of customary law. The term «standard» is broader and opens for standards that are adopted both in legally and non-legally binding instruments. This suggests that soft law IMO instruments such as guidelines, codes and recommendations may qualify as GAIRAS and be adopted and made legally binding through the rules of reference in LOSC Article 21(2) and 211(5).

It seems to be an agreed opinion that regulation expressed in soft law instruments may qualify as GAIRAS. The ILA Committee on Coastal State Jurisdiction Relating to Marine Pollution has provided a detailed analysis of the concept of GAIRAS. It is argued in this ILA report with regard to soft law instruments that the decisive element to determine whether the regulation qualify as GAIRAS, is the practice of the states and whether the regulation is widely accepted, not in which form it is adopted.

A key question when defining the scope of the term GAIRAS is when a «international rule or standard» is accepted by so many states that it is «generally accepted». First it is reasonable to understand the wording «generally accepted» so that it encompasses more than customary law, as a reference to customary law would not be necessary. The wording «generally accepted» includes more than rules and standards that have the status as customary law. A key question when defining the scope of the term GAIRAS is when a «international rule or standard» is accepted by so many states that it is «generally accepted». First it is reasonable to understand the wording «generally accepted» so that it encompasses more than customary law, as a reference to customary law would not be necessary. The wording «generally accepted» includes more than rules and standards that have the status as customary law.


312 ILA Report, supra note 21, p.37-38, Conclusion #2.

law, but it is on the other hand reasonable to understand the wording so that it requires that the potential regulation is accepted by a majority of the states. In literature, the threshold «widespread and representative participation» have appeared to gain support. In addition to the requirement that the regulation must be accepted by a certain number of states, the states that have accepted it must also cover a certain geographical area. It is not sufficient to qualify as a GAIRAS that a regulation is accepted within a certain geographical area, such as within EU.\textsuperscript{315}

The Polar Guidelines are recommendatory, not legally binding Guidelines.\textsuperscript{316} The wording «rules and standards» opens however, also for standards that are set out in other non-legally instruments. Consequently, the Polar Guidelines could develop into GAIRAS, and thereby be adopted and made legally binding for vessels operating in the Arctic Ocean. To qualify as GAIRAS the Polar Guidelines must however, gain wide enough support and be endorsed and practiced by enough States.

What is a CDEM standard?
Technical requirements to the vessels or the manning of the vessel may reduce the likeliness for accidents occur and if they occur minimize the damage from oil spills and requirements to prevent or reduce operational pollution from vessels.\textsuperscript{317} CDEM requirements to the vessels that operate in the Arctic is therefore relevant for the Arctic coastal States to ensure that the vessels constructed, equipped and managed to be able to navigate under the particular conditions in the region.

The LOS Convention does not clarify what qualify as a CDEM standard. The LOS Convention states that laws and regulations relating to the innocent passage shall not apply to the «construction, design, equipment and management», without clarifying the meaning of these terms.\textsuperscript{318} Which regulations that are defined as a CDEM standard or which regulations that are operational or discharge standards are therefore subject to interpretation.\textsuperscript{319}

There have been some discussions whether measures such as navigational or satellite tracking systems and fuel requirements (ban on heavy fuel) are CDEM requirements or not. As referred to above in section 4.2.2 the Arctic coastal States are considering to submit a proposal of a ban on heavy grade oil both as cargo and as fuel, and it is therefore discussed in the following whether this would be a CDEM requirement where the jurisdiction of the coastal State is limited to GAIRAS or not. When discussing whether a ban on heavy grade oil qualify as a CDEM standard or an operational/discharge standard, one must distinguish between a ban on heavy grade oil as cargo and heavy grade oil as fuel. A ban on heavy grade oil as cargo is not reasonable to see as a CDEM standard as regulation of cargo that a vessel may carry, is a regulation of neither «design», «construction» or «equipment.» However a ban on single hulled oil tankers to carry heavy grade oil, which is adopted in the MARPOL is a CDEM requirement, as this is a regulation that apply to the construction of the vessel.\textsuperscript{320}

When it comes to a ban on heavy grade oil as fuel, the situation is more unclear. There are different opinions to what extent this requirement is a CDEM standard or not.\textsuperscript{321} On one hand one may argue that fuel requirements literally do not qualify as a CDEM standard as it is not part of the construction or the equipment of the vessel. Molenaar\textsuperscript{322} has on the other hand expressed a restrictive


\textsuperscript{316} Guidelines for Ships operating in Polar Waters, supra note 123.

\textsuperscript{317} Molenaar, (1998), supra note 14, p.23.

\textsuperscript{318} LOS Convention, Article 21(2).

\textsuperscript{319} Johnson, 2004, supra note 188, p.78-79.

\textsuperscript{320} MARPOL 74/78, Annex I, Regulation 19-21.

\textsuperscript{321} See Ringbom, 2008, supra note 15, p.433-435 where he discusses whether fuel requirements represent a CDEM standard.

\textsuperscript{322} See Molenaar, 1998, supra note 14, p. 67.
view as he argues, «regulation of the sulphur content in fuel oil and fuel oil quality must be regarded as an equipment standard, as it concerns a requirement to ensure that an emission standard is met. » The limitation for CDEM regulations is a limitation of the sovereignty of coastal States. This is an argument in favour of a restrictive interpretation of what is a CDEM requirement and thereby when the limitation on the sovereignty applies. A restrictive interpretation of what a CDEM standard is, could therefore suggests thus that fuel requirements are not CDEM regulations, as it does not directly deal with construction, design, equipment or manning. On the other hand such regulations may be characterized as static as the vessels cannot adapt to them during their journey. This suggests that the purpose or the reasoning of the exception applies in this case as well. Ringbom discusses fuel requirements and argues that it is «probably safer to consider fuel quality requirements as being analogous to CDEM standards for the purpose of establishing the jurisdictional limits of coastal State laws in the territorial sea. »

With regard to the use of heavy grade oil as fuel it is however, held in a report from the Det Norske Veritas to the Arctic Council that:

«Most marine engines running on HFO will have been designed for operation also on distillate fuels of marine diesel oil quality (ISO DNB quality), but not necessarily on marine gas oils (ISO DMX/DMA/DMZ quality. Pumping fuels with too low viscosity into machinery not designed for such may lead to technical problems. » This suggests that a ban on heavy grade fuel does imply requirements with regard to the design and construction of vessels, and therefore must be dealt with as a CDEM standard.

Similarly, it can also be questioned whether restrictions on discharges of soot is a CDEM standard or not. Black carbon emissions from ships navigating in the Arctic may accelerate the melting of the ice. Emissions of such harmful substances can be removed through new technology. If restrictions or prohibitions on emission of black carbon would include technical requirements to the design or construction of vessels it must also be dealt with as a CDEM standard.

This shows that there are uncertainties and a certain scope for interpretation with regard to what measures that qualifies as CDEM requirements. There might also be a legal development where measures are adopted by the coastal States as navigational or discharge standards to ensure maritime safety and environmental protection of the Arctic environment. If the measures are defined as operational requirements and not CDEM requirements, the coastal State may adopt national regulations that go beyond GAIRAS in the territorial sea. Nevertheless, these regulations must be balanced as provided in the LOS Convention Article 24 and must not hamper the right of innocent passage.

Having said this, it is reasonable to think that the coastal State will be reluctant to unilaterally adopt measures where it is uncertainty as to whether they may be characterized as CDEM standards or not. It is more likely that the states will continue to cooperate at the international level through IMO and develop international CDEM standard.

326 See AMSA Report, supra note 3, (2009) p. 5. About the effect black carbon has on reducing the albedo, see also p. 142.
5.2.3. Navigational standards

General
To ensure safe navigation and environmental protection of the Arctic, the coastal States may adopt navigational regulations. Vessels that navigate in the Arctic are posed to particular challenges due to ice conditions and the harsh weather. Different navigational regulations such as for instance requiring that vessels navigate in a certain distance from land, requiring mandatory pilotage or by tracking vessels by a ship reporting system, could be appropriate measures to avoid accidents or incidents in the maritime zones of the Arctic coastal States.

All states enjoy the right of innocent passage in the territorial sea and have freedom of navigation in the EEZ. Flag states must however, comply with the regulations that the coastal State may adopt within their coastal maritime zones, such as requirements for vessels to follow certain routes. The flag state is also under a legal duty to ensure maritime safety and minimize marine pollution, as provided in LOS Convention Article 94 and 211 (2).

The aim of this section is to examine the scope of the coastal State jurisdiction to adopt navigational measures that apply to vessels operating in the Arctic waters. Regulation of navigation in the Arctic region raises some particular questions such as: How may the navigation be regulated as the ice conditions may vary from year to year and from season to season? Further, to what extent are the available navigational standards flexible so that they may be tailored to meet these and other particular challenges to Arctic shipping? These questions are not solely legal questions and therefore not possible to answer in this report.

What are navigational standards?
The category «navigational standards» includes different routeing measures such as ship reporting systems (SRS) and vessel traffic services (VTS). Navigational standards are adopted on the basis of the SOLAS 74 chapter V and COLREG 72.

Routeing measure is an important navigational measure to ensure maritime safety and environmental protection. By requiring vessels to follow certain directions or accommodating the navigation in other ways, accidents may be prevented and sensitive areas may also be protected from operational pollution from vessels. Traffic separation scheme (TSS) is a frequently applied routeing measure, which is adopted in COLREG 72.

SOLAS Chapter V Regulation 10 provides a legal basis for the adoption of routeing measures. According to SOLAS V/10 (1):

«Ships routeing measures contribute to safety of life at sea, safety and efficiency of navigation and/or protection of the marine environment. » Ships’ routeing measures are recommended for use by, and be made mandatory…»

Regulation 10 furthermore states that the routeing systems must be adopted and implemented «in accordance with the guidelines and criteria adopted by the organization» with an accompanying footnote to General Provisions of Ships’ Routeing (GPSR) adopted by IMO. The GPSR is adopted as a resolution and is not legally binding. The reference to «guidelines and criteria adopted by the organization» implies however, that the regulation on routeing measures in SOLAS must be read together with the GPSR. While SOLAS provides a legal basis for adopting mandatory routeing measures, the GPSR elaborates SOLAS by specifying possible routeing measures that may be adopted. Examples of routeing measures included in the GPSR are traffic separation schemes, deep-water routes, precautionary areas, areas to be avoided and no-anchoring areas. The GPSR also contains procedural and substantial requirements to the routeing measures.

Ship reporting system is a category of navigational standards that involve communication between the vessels and the coastal State authorities. SOLAS 74 regulation V/11 contains a legal basis for ship reporting systems. It follows from SOLAS 74 V/11 (1) that:

«Ship reporting systems contribute to safety at sea, safety and efficiency of navigation and/or protection of the marine environment. A ship reporting system, when adopted and implemented in accordance with guidelines and criteria developed by the organization pursuant to this regulation, shall be used by all ships or certain categories of ships or ships carrying certain cargoes in accordance with the provisions of each system so adopted. »

Moreover SOLAS 74 also includes a regulation on vessel traffic services VTS, regulation V/12. VTS are shore-side systems that range from the provision of information to

328 LOS Convention, Articles 21(4) and 58(3).
329 See note 64 for reference.
331 The General Provisions on Ships’ Routeing adopted by the Organization by resolution A.572(14).
vessels of the position of other traffic or meteorological warnings to extensive management of traffic.\textsuperscript{334} Vessels that enter a VTS area must report to the authorities and may be tracked by the VTS control centre.

It follows from the SOLAS 74 regulation V/12 (a) that: «vessel traffic services (VTS) contribute to safety of life at sea, safety and efficiency of navigation and protection of the marine environment, adjacent shore areas, work sites and offshore installations from possible adverse effects of maritime traffic.»

It is also established in the SOLAS regulation V/12 (c) «… that Contracting Governments planning and implementing VTS shall, wherever possible, follow the guidelines developed by the Organization. » Such guidelines are adopted by IMO.\textsuperscript{335}

Several navigational regulations have been adopted by the Arctic coastal States in cooperation with IMO. For instance in the Northern part of the Norwegian EEZ, a traffic separation scheme consisting of shorter mandatory and recommended routes is adopted from Vardø to Røst.\textsuperscript{336} Still it has not, however, been adopted a comprehensive mandatory or voluntary routeing system or other navigational measures in the Arctic and the Arctic Ocean has not so far been addressed as a unity for shipping.\textsuperscript{337}

Coastal state jurisdiction to adopt navigational standards
In the internal waters, the coastal State has sovereignty to regulate shipping activities and may adopt any navigational measure it wishes and make it applicable for foreign vessels.

In the territorial sea, the coastal State may due to its sovereignty, regulate the innocent passage. The coastal State may, according to Article 21 (1) adopt laws and regulations relating to the innocent passage for the listed purposes. Of particular relevance in this regard are a) «the safety of navigation and the regulation of maritime traffic» and d) «the preservation of the environment of the coastal State and the prevention, reduction and control of pollution thereof.»

The wording of Article 21 is broad and it provides the coastal State with legislative jurisdiction to adopt any kind of navigational measures such as compulsory pilotage or other routeing measures such as areas to be avoided and precautionary area, vessel traffic services and ship reporting systems.

In Article 22, the jurisdiction to regulate the innocent passage is specified with regard to the two measures sea-lanes and traffic separation schemes. According to Article 22 the coastal State may adopt sea lanes and traffic separation schemes in situations «…where necessary having regard to the safety of navigation …»\textsuperscript{338} Moreover, it follows from Article 22 (3) that the coastal States when designating sea lanes or TSS shall take into account the «recommendations of the competent international organization.» It could be questioned whether Article 22 limits the jurisdiction of the coastal States provided in Article 21, to adopt the two navigational measures sea-lanes and TSS. It is however, more reasonable to read Article 21 and 22 in the light of each other, where a general jurisdiction to regulate the innocent passage is provided in Article 21 (1) and where the jurisdiction is specified in Article 22 with conditions for the particular measures sea-lanes and TSS.\textsuperscript{339}

A particular question is to what extent Articles 21(1) a) and 22 (1) allows adoption of navigational standards solely for the purpose of environmental protection. A strict reading of the wording «…for the purpose of safety of navigation and regulation of traffic…» of Article 21 (1) a) and «…where necessary having regard to the safety of navigation…» of Article 22 (1) could imply that navigational standards may only be adopted to regulate the shipping traffic to avoid accidents and not solely for the purpose of protecting sensitive or valuable areas.

To this one may however, argue that a contextual reading of Article 21 (1) a) and Article 22 (1) together with Article 21 (1) f) and Article 22 (2) indicates that navigational standards may be adopted for environmental purposes. Article 21 (1) (f) provides jurisdiction to adopt regulations for the purpose of «preservation of the environment» whereas Article 22 (3) opens for the use of sea lanes for vessels that pose particular environmental threats such as tankers, nuclear-powered vessels and vessels carrying dangerous substances. Moreover, there appears to be an agreed opinion that safety of navigation and environmental protection are so closely related that navigational measures also may be adopted when the primary purpose is to ensure environmental protection, for instance to protect a particular area from the impacts of shipping.\textsuperscript{340} The term «safety of navigation» should thus be interpreted so that it also encompasses environmental protection.

According to the SOLAS Convention regulation V/10 a), routeing measures may be made mandatory. A particular question is whether SOLAS requires approval from IMO to adopt mandatory routeing measures. It follows from SOLAS V/10 a) that the routeing measures may be mandatory when «adopted and implemented in accordance with the guidelines and criteria developed by the Organ—


\textsuperscript{335} Guidelines for Vessel Traffic Services, Resolution A. 857 (20).

\textsuperscript{336} Report to the Maritime Safety Committee, NAV 52/18.

\textsuperscript{337} Molenaar, 2009, supra note 8, p. 313.

\textsuperscript{338} About the relationship between LOS Convention Article 21 and 22, see Molenaar, 1999, supra note 14, p. 202-203.

\textsuperscript{339} Ibid., p.203-204.

ization. » However, it is not reasonable that IMO when adopting the SOLAS Convention intended to limit the prescriptive jurisdiction provided in the Articles 21 and for the coastal State in the territorial sea.341 Thus, coastal States may act unilaterally and adopt mandatory routeing measures within the territorial sea.

As it follows from Article 22 (3) (a) that the coastal State shall, when designating sea lanes or traffic separation schemes «…take into account the recommendations of the competent international organization», it could be questioned to what extent they are required to follow advice from (IMO). Furthermore, it could be argued that this is a condition for making these measures mandatory for other vessels. The wording «shall take into account», implies that they are required to consider such recommendations. However, the coastal States are only required to take the recommendations «into account»; they are not obliged to designate sea-lanes in consistency with them. It is therefore not reasonable to understand Article 22 (3) a) so that it is a condition for adopting mandatory sea-lanes or TSS that the coastal State follow advice from IMO when designating such sea-lanes in the territorial sea. Other interests and considerations could in a concrete situation be more significant and be decisive for a coastal State than considerations within IMO with regard to whether and how a sea lane should be designated.

However, regulations adopted based on LOS Convention Articles 21 and 22 must be balanced against the principle in Article 24. It follows from Article 24 that the innocent passage must not be «hampered». This is elaborated further as it is established that the regulations must not «…have the practical effect if denying or impairing the right of innocent passage. » When a routeing measure or a ship reporting measures is adopted it must be determined whether the regulation has «the practical effect of denying or impairing the right of innocent passage». In this evaluation the need for establishing the navigational standard and its implications for the right of innocent passage is relevant.342 In a situation where a routeing measure is considered necessary to protect a particular valuable or sensitive area which would often be the case in the Arctic region, it is reasonable that other states must tolerate more significant interference in the exercise of their right of innocent passage.

In the EEZ, the jurisdiction of the coastal States is according to Article 211 (5) limited to adopt navigational standards that conform to and give effect to GAIRAS. The concept of GAIRAS and when an international regulation qualify as GAIRAS is discussed above in section 5.3.2.2.

The IMO Conventions SOLAS and COLREG are widely accepted and many states are parties to them. It is therefore clear that these instruments are generally accepted and qualify as GAIRAS.343 This means that navigational standards set out in these instruments may be adopted by a coastal State in the EEZ and made applicable to foreign vessels. Such a regulation would thus be legally binding also upon a vessel that is carrying the flag of a state, which is not a party to SOLAS or COLREG.

With regard to the adoption of routeing measures within the EEZ, it must however, be noted that in contrast to the territorial sea where navigational measures may be adopted as unilateral measures, the international instruments COLREG and SOLAS require approval from IMO for the adoption of mandatory navigational measures in the EEZ.344

A particular legal question with regard to the adoption of navigational standards and navigational standards such as routeing measures may qualify as GAIRAS as these measures are designed for a particular geographical area. How can measures that are adopted to apply within a certain geographical limit, comply with the requirement «generally accepted»?345 However, it is reasonable that if the navigational standard such as the regulation of TSS set out in COLREG has achieved widespread and representative acceptance, the regulation qualifies as GAIRAS even though the measure in its nature apply locally within geographically defined limits.

Regulation of vessels transporting dangerous/hazardous cargo

Vessels that are transporting dangerous or hazardous cargo such as heavy grade oil, nuclear waste or other dangerous substances or materials, represent a particular environmental threat to the sensitive Arctic marine environment. This raises the question, to what extent the coastal States may adopt navigational measures to avoid or restrict the navigation of such vessels.

Regulations on how dangerous cargo should be carried and specific rules for nuclear vessels are developed and adopted within IMO in the SOLAS Convention. Moreover, the Basel Convention includes regulations that aim to reduce transboundary movements of hazardous wastes.346 These regulations are not further discussed as the focus is on the jurisdiction of the coastal State to regulate the passage of such vessels. Within the internal waters, coastal States may restrict or even deny the navigation of such vessels. In the territorial sea, other states enjoy however, the right of innocent passage. Even though vessels carrying hazardous cargo are a risk to the marine environment, the starting point is

344 See SOLAS V/10 and COLREG Rule 10.
345 Molenaar, 1998, supra note 14, p.365 raises the question.
346 See section 3.3.2.

49
that they are in innocent passage. The definition of when a vessel is in non-innocent passage in the LOS Convention Article 19 (2) is linked to actions such as illegal fishing or wilful pollution, not the ordinary passage of particular vessels. Nevertheless, it has been argued that a vessel carrying dangerous cargo presents such a threat against vital interests of the coastal States, that such passage is «prejudicial to peace, order and security» in Article 19 (1) and therefore may be considered as non-innocent passage. The precautionary principle in international environmental law could be used as an argument in favour of this view. However, as Article 19 (2) h) includes «any act of wilful and serious pollution» as an action that deprives the vessel the status of innocent passage, this suggest that a threat of pollution would not be enough. Moreover, Articles 22 and 23 include provisions on the regulation of nuclear-powered vessels or vessels carrying nuclear or other dangerous cargo. Seen together, this indicates that also vessels carrying dangerous cargo that represent a risk for environment, enjoy the right of innocent passage.

However, the coastal State has prescriptive jurisdiction over vessels in innocent passage and may adopt navigational regulations as provided for in the LOS Convention Article 21 and 22. According to Article 22 (2), the coastal State may establish sea-lanes and TSS for «tankers, nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances or materials.» Since these vessels represent a higher risk for the interests of the coastal States than other vessels, the coastal States are therefore provided with jurisdiction to adopt navigational measures that may be onerous and cause burdens for other states. The coastal State must however, according to Article 22 (3) take into account the recommendations of IMO when they adopt these measures. Moreover, the regulations must be balanced against the principle in Article 24 (1).

In addition, Article 23 deals with these particular vessels. According to Article 23 foreign nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances shall «carry documents and observe special precautionary measures established for such ships in international agreements.» It must be noted here that Article 23 refers to «precautionary measures» that are established in «international agreements» and not to national regulations adopted by the coastal State. In addition to the special provisions in Article 22 (2) and 23, the coastal State are provided with broad prescriptive jurisdiction to regulate the innocent passage in Article 21.

The general prescriptive jurisdiction provided in Article 21, applies also to vessels carrying dangerous or hazardous cargo.

A particular question related to the regulation of the right of innocent passage, is whether the coastal State may require prior notification before the vessels enters into the territorial sea. In this way, the coastal State may take actions and be prepared in order to protect the marine environment and other interests such as fisheries interests. The question is discussed in legal literature.

The requirement of prior notification was part of the negotiations, but not included in the final text of the LOS Convention. This could indicate that the coastal State does not have the right to adopt such a regulation. However, the wording in Article 21 (1) is very broad and may cover the measure prior notification. Prior notification could thus be a relevant regulation according to the purposes set out in Article 21 (1) a) «the safety of navigation…» and in f) for «the preservation of the environment…» In support of this view, it is held by Churchill that although state practice is diverging at this point, a requirement of prior notification is arguably permitted on the basis of Article 21. The obligations to protect the marine environment in Article 192 and 194 (5) moreover suggests that the coastal States should be entitled to make this requirement as the vessels may present such a risk for the environment.

When it comes to the EEZ, the coastal States are only allowed to adopt regulations of the navigation of these vessels that comply with GAIRAS. The coastal State may for instance with the approval of IMO adopt sea-lanes for vessels carrying dangerous cargo. In relation to the discussion whether the coastal State may require prior notification, the coastal State is only competent to do this if there is an international rule or standard that qualify as GAIRAS where it is opened for this measure. So far, there is no GAIRAS available that provides for this regulation within the EEZ.
5.3 Protection of the marine environment

5.3.1 General
In this section, the coastal State jurisdiction to adopt other measures for the protection of the environment is examined. This includes measures to prevent and minimise emissions and discharge, measures to prevent discharges of alien species through ballast water and measures that the coastal State may take to protect ice covered areas from marine pollution. Nevertheless, as part of the normal operation of vessels, pollution from a variety of substances is discharged into the sea. With the sensitive and unique environment in the Arctic, it is assumed by scientists that operational pollution even from a few vessels may cause serious damage to the marine environment. The cold water and the ecosystems tailored to these conditions more vulnerable for pollution. Pollution by oil, through accidents or through operational discharges is the major threat from shipping. Emission/discharge standards are in this respect defined as measures that aim to prevent or minimize marine pollution. The most significant legal instrument for the regulation of discharges is the MARPOL 73/78, which is addressed above in section 3.3.3. The question addressed here is what regulations to prohibit or minimize operational pollution the coastal State may adopt in the territorial sea and in the EEZ.

In the territorial sea, the coastal State has the competence to regulate discharges into the sea from vessels according to Article 21. These regulations do not have to comply with GAIMAS, which means that the coastal State may adopt national discharge standards that go beyond the standards that follow from MARPOL. However, such regulations must not «hamper the innocent passage» as set forth in Article 24.

In the EEZ, the coastal States may adopt regulations on discharges regulated through the Annexes of MARPOL 73/78. Annex I and II are accepted as GAIMAS. If the coastal State wants to adopt stricter discharge standards that comply with or give effect to GAIRAS for the purpose of prevention, reduction and control of pollution from vessels.

5.3.2 Emissions/discharges standards
Generally, shipping is considered an environmental friendly way of transport. Operational pollution from vessels only constitutes about 10% of the total amount of marine pollution. Nevertheless, as part of the normal operation of vessels, pollution from a variety of substances is discharged into the sea. With the sensitive and unique environment in the Arctic, it is assumed by scientists that operational pollution even from a few vessels may cause serious damage to the marine environment. The cold water and the ecosystems tailored to these conditions more vulnerable for pollution. Pollution by oil, through accidents or through operational discharges is the major threat from shipping. Emission/discharge standards are in this respect defined as measures that aim to prevent or minimize marine pollution. The most significant legal instrument for the regulation of discharges is the MARPOL 73/78, which is addressed above in section 3.3.3. The question addressed here is what regulations to prohibit or minimize operational pollution the coastal State may adopt in the territorial sea and in the EEZ.

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The question here is to what extent the coastal State may adopt standards to protect the marine ecosystems in the Arctic from introduction of alien species through exchange of ballast water. Within the internal water, the coastal State may adopt any measures and may also prohibit the exchange of ballast water. Within the territorial sea, the coastal State may adopt national discharge standards that go beyond the standards that follow from MARPOL. However, such regulations must not «hamper the innocent passage» as set forth in Article 24.

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5.3.3 Ballast water
Exchange of ballast water is a threat to marine ecosystems. Organisms living in the ballast waters may be discharged into the sea in another area far from where the water was taken on board. These alien organisms may cause damage to the marine ecosystems as they may alter or disturb the relationship between the species in the ecosystems. This may cause particular damages in the Arctic, as the ecosystems here are vulnerable and sensitive.

To address this threat to the marine environment, the Ballast Water Convention was adopted within IMO in 2004, but has not entered into force yet. The Convention and its standards for ballast water management are presented above in section 3.3.3.

The question here is to what extent the coastal State may adopt standards to protect the marine ecosystems in the Arctic from introduction of alien species through exchange of ballast water. Within the internal water, the coastal State may adopt any measures and may also prohibit the exchange of ballast water. Within the territorial sea, the coastal State may adopt national discharge standards that go beyond the standards that follow from MARPOL. However, such regulations must not «hamper the innocent passage» as set forth in Article 24.

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51
The coastal States have however, according to Article 56 «sovereign rights for the purpose of …conserving and managing…» of living resources, and may arguably apply this as legal basis when they regulate discharges of organisms from ballast water.\textsuperscript{355} The general obligations to protect the marine environment including also rare and fragile ecosystems in Articles 192 and 194 (5), support the view that the coastal States may adopt standards for ballast water on the basis of their sovereign rights in the EEZ.

Regulations adopted on this basis must however, according to Article 56 (2) be adopted with due regard to the navigational rights of other states in the EEZ.

5.3.4. The “Arctic Exception”: Coastal State Environmental jurisdiction in Ice-Covered Areas

Major parts of the Barents Sea (particularly the southern parts) are not ice-covered and LOS Convention Article 234 is not applicable. But considerable parts of the maritime areas around Svalbard are regularly covered by ice.\textsuperscript{356} These areas are considered vulnerable and sensitive to oil spills.\textsuperscript{357} The question is whether Article 234 is applicable to these areas and if so; what measures Norway may take to regulate marine shipping here.

The provision is applicable «…within the limits of the exclusive economic zone…» The 200 nm Fisheries Protection Zone established off the archipelago of Svalbard in 1977 relates to the sovereign rights of the coastal State to the living marine resources under LOS Convention Article 56 (1) (a). The 200 nm zone is equivalent to high seas as concerns international shipping. Norway has yet to establish a full 200 nautical miles EEZ on the basis. As Article 234 supplements the jurisdiction of the coastal State to regulate international shipping in the EEZ under LOS Convention Article 56(1)(b), it does not become applicable before Norway establishes an EEZ here. The objective of the further discussion is to investigate whether Article 234 would be applicable if such zone was established and what measures could be taken by Norway as a coastal State.

On this basis, one first question is whether Article 234 is applicable only in the EEZ or whether it also provides enhanced jurisdiction in the 12 nautical miles territorial sea: What is the meaning of «…within the limits…»? The question is addressed in legal theory and different opinions are expressed.\textsuperscript{358} If the provision is only applicable in the EEZ, the consequence would be that the coastal States are provided with more extensive jurisdiction here than in the territorial sea. Whereas the coastal State would be competent to establish stricter CDEM rules and standards for international shipping in the EEZ than those accepted as GAIRAS to provide for safe navigation through ice-covered areas this would not be the case in the territorial sea. Under LOS Convention Article 21 (2) the CDEM rules and standards made applicable to vessels in innocent passage are required to qualify as GAIRAS. This is not consistent with the system of the LOS Convention, where the interests of the coastal States are considered to be stronger and more vital closer to the coast and therefore are provided with broader jurisdiction in the areas that are closest to land.

The rationale for adopting Article 234 is the acknowledgement that ice-covered areas are sensitive to marine pollution. This argument applies regardless of whether the ice-covered area lies within the territorial sea or in the EEZ. The best reasons are therefore in favour of an interpretation where Article 234 is applicable to both the EEZ and the territorial sea.

In order for the coastal State to adopt regulations for vessels navigating within 200 nm from its coasts, the criteria is that that vessels are operating in «… ice-covered areas […] where particularly severe climatic conditions and the presence of ice covering such areas for most of the year…» These criteria raise several questions: First, when are areas ice-covered for «most of the year» (temporal), secondly what constitute ice-cover (extent and thickness)? A third question raised on in theory is the interpretation where Article 234 is applicable to both the EEZ and the territorial sea.

During the summer season the provision would not be applicable and the jurisdiction of the coastal State in its EEZ would be regulated by LOS Convention Article 211(5). On the first question, in legal theory «most of the year» has been interpreted to mean that the area must be covered by ice more than six months.\textsuperscript{360} As to the coverage and thickness of sea ice, the decisive must be whether the ice conditions «…create obstructions or exceptional hazards to navigation…» It is argued that «where» must be read as «when». It means that the jurisdiction of the coastal State under Article 234 to adopt regulations is limited to periods of the year when the climatic conditions and the presence of ice create obstructions or hazards to navigation.\textsuperscript{359} During the summer season the provision would not be applicable and the jurisdiction of the coastal State in its EEZ would be regulated by LOS Convention Article 211(5). On the first question, in legal theory «most of the year» has been interpreted to mean that the area must be covered by ice more than six months.\textsuperscript{360} As to the coverage and thickness of sea ice, the decisive must be whether the ice conditions «…create obstructions or exceptional hazards to navigation…» It is uncertainty as to whether the areas in the 200 miles zone of Svalbard may be considered ice-covered for «most of the year». There are large variations in presence of sea-ice throughout the year.\textsuperscript{361} These variations relate both to the thickness and the extent of the sea ice.\textsuperscript{362} The sea ice is reduced in the Arctic Ocean and there have been particular extensive reductions in the Barents Sea.\textsuperscript{363}

\textsuperscript{355} Molenaar, 2009, supra note 8, p.306.
\textsuperscript{357} See Report no. 8 to the Storting (2005-2006), p. 32-34.
\textsuperscript{360} See Molenaar, 1998, supra note 14, p. 420.
\textsuperscript{361} See footnote 360.
\textsuperscript{362} See «Status og utviklingstrek for klimaindikatorer i norsk del av Arktis» MOSJ tolkningssrapport – lima, John Richard Hansen (red.), The Norwegian Polar Institute, Report series no. 130, p. 21. 363 Ibid.
On the third question, it is more logical to read the criteria as defining the geographical area of application of Article 234 rather than the temporal jurisdiction of the coastal State. As the criteria are qualified by the formulation «...presence of ice covering such areas for the most of the year...» it is presumed that the coastal State is competent to regulate even if the relevant areas are not ice-covered. However, the requirement to have «due regard to navigation» will restrict the exercise of its jurisdiction. The coastal State may not enforce regulations aimed at preventing hazards or obstructions from ice in periods when the areas are not ice-covered.

If Article 234 is applicable, the coastal State is competent to unilaterally adopt a wide range of measures to regulate international shipping. In adopting and enforcing these measures, the coastal State is required to have due regard to navigation and the protection of the marine environment. But the wording and placing of Article 234 suggest that the coastal State may take measures that otherwise would constitute illegitimate restrictions on rights of navigation. The regulations are not to be politically motivated as they are to be based on «the best available scientific evidence».

The measures may include both CDEM rules and standards and operational requirements. It could include requirements that vessels are constructed and designed to operate in ice-covered areas, e.g., standards briefly discussed in chapter 3. In addition, the coastal State could regulate requirements to ensure that vessels would withstand icing and to operate in remote areas where there are inadequate infrastructure (SAR, port reception facilities etc.) as well as particular requirements to manning and qualification of the crew. By adopting measures consistent with the Polar Shipping Guidelines and a future Polar Code, accepted by a majority of flag states there would be appropriate due regard for international navigation.

Further, in order for the coastal State to ensure compliance with such rules and standards it may introduce procedures for reporting on entry into and the passage through the relevant area. The coastal State would be competent to refuse vessel access if they are not consistent with the necessary CDEM rules and standards. It is more questionable if the coastal State may ban vessels with hazardous cargo or fuel from navigating through the area (if they otherwise comply with CDEM rules and standards). The coastal State is also competent under Article 234 to regulate navigation, e.g., by establishing mandatory sea routes to avoid the most ice-infested areas and/or to protect vulnerable areas. It also includes right to instruct vessels to use icebreaker and/or ice pilot.

This could mean either measures or regulations that are stricter than existing GAIRAS, or measures or regulations that are not part of any international instrument adopted by IMO but unilateral measures developed by the coastal State, particular tailored for the concrete area. One could also see Article 234 as a provision that provides for area-based management. We have however, examined it as part of the section on environmental protection - as it provides for the jurisdiction to adopt a broader set of measures - not only area-based measures.

5.4. Area-based regulatory measures

5.4.1 General

This section includes examination of area based management tools that address protection of the marine environment against the impacts of shipping, including the use of the tool MPA (Marine Protected Area) which are required in international conventions such as CBD, and other are emphasised. Such measures are of significance as they provide for the possibility to protect certain areas where all human activities are addressed in an integrated way. Through the application of area-based measures such as MPAs, the coastal State may adopt measures that are particular tailored to protect and conserve the marine environment and biodiversity within a concrete area.

This section addresses both integrated MPAs required by CBD and OSPAR, where all human activities may be regulated or prohibited and other area based measures and other legal mechanisms for protecting certain areas from the impacts of shipping such as MARPOL Special Area, PSSA and special areas in LOSC 211 (6). These legal instruments may be applied in connection with the establishment of integrated MPA to comply with the legal obligations in international environmental law to establish MPAs to protect and conserve marine biodiversity and to ensure integrated management and ecosystem approach - where all activities are addressed including shipping.

With the sensitivity of the Arctic, marine environment the use of area based measures where regulations of shipping that are particularly tailored to the geographical area could be necessary. The question addressed is to what extent the coastal State may adopt area based measures where protective measures that are tailored to protect a particular maritime area from the environmental impacts of shipping?

5.4.2 Marine Protected Areas in international environmental law

A number of treaties both at the global and regional level address the use of MPAs. The primary global obligation on MPAs for the purpose of protection and conservation of biological diversity is the Convention on Biological Diversity  where the states are required to establish a system of protected areas. The Conference of Parties under the CBD as also adopted a program of work on conservation of marine biodiversity and in that way elaborated the obligations. The legal obligation to adopt MPAs is elaborated in the CBD.
MPAs on the basis of CBD is weakened as the states according to Article 8 are only required to do this «…as far as possible and as appropriate… ».

At the regional level the OSPAR Convention\textsuperscript{366} obliges the states to protect and conserve the marine environment and the marine biodiversity. To implement these obligations states are recommended by the OSPAR Commission to establish Marine protected areas.

The obligation in international environmental law does however, not provide the coastal State with jurisdiction to regulate or ban shipping activities within MPAs. It follows from Article 22 of CBD that the obligations must be implemented in consistence with the rights and obligations of states under the law of the sea. MPAs must therefore be adopted in combination with other area-based instruments that are designed to regulate shipping.

5.4.3 LOS Convention Article 211 (6)
The LOS Convention Article 211 (6) authorizes the coastal State to adopt stricter regulations for the prevention of pollution within special areas in some circumstances and upon a determination of IMO. With Article 211 (6) the jurisdiction of the coastal States to adopt regulations that are conforming to and giving effect to GAIRAS in Article 211 (5) is enhanced.\textsuperscript{367}

A special area under Article 211 (6) is a «…clearly defined area…where the adoption of special mandatory measures for the prevention of pollution from vessels is required for technical reasons in relation to its oceanographical and ecological conditions, as well as its utilization or the protection of its resources and the particular character of its traffic…»

Article 211 (6) is a complicated provision and it includes substantial and procedural conditions that must be met to protect «a particular, clearly defined area» by the adoption of «special mandatory measures for the prevention of pollution. »

Article 211 (6) may be applied in a situation when the international rules and standards (GAIRAS) are «…inadequate to meet special circumstances…». The reference to «ecological conditions» implies that an area may be defined under Article 211 (6) for the purpose of protection and conservation of biological diversity, ecosystems and habitats. The conditions set out in Article 211 (6) a) are cumulative, and it is IMO that determines whether the area correspond with them.

It is not specified what kind of special mandatory measures that may be adopted within a special area under Article 211 (6). When IMO has determined that the «the area correspond to the requirements» the coastal State may: «…adopt laws and regulations for the prevention, reduction and control of pollution from vessels implementing such international rules and standards or navigational practices as are made applicable, through the organization, for special areas. »

It is natural to understand the «regulations for the prevention, reduction and control of pollution» and «international rules and standards or navigational practices» so that it includes both CDEM standards, discharges from the operation of vessels and operational regulations to ensure maritime safety to avoid accidents that may lead to oil spills.\textsuperscript{368} The laws and regulations that are adopted must be «made applicable» through IMO.

LOSC Article 211(6) c) goes further as it enables the adoption of «additional laws and regulations. » Whereas laws and regulations adopted on the basis of 211 (6) a) must be made applicable through an IMO instrument, new regulations may be adopted on the basis of the provision in c). Article 211 (c) makes however, an exception for CDEM standards. Within a special area under 211 (6), it is therefore only CDEM standards that are made applicable through IMO that can be adopted.

Nevertheless, Article 211 (6) c) has the potential to ensure protection of a particular sensitive area within the EEZ as new measures, tailored to meet its particular characteristics and the present threats of the area can be developed and adopted. On the basis of Article 211 (6) c) a ban on navigation for all vessels or certain types of vessels could for instance be adopted.

5.4.4 MARPOL Special Areas
It is acknowledged today that with its sensitive marine environment, the Arctic Ocean is sensitive to operational pollution and vessel discharges.

The MARPOL 73/78, Annexes I (oil) II (noxious liquid substances) and V (garbage) open for adoption of special areas where stricter discharge standards apply. Annex VI moreover opens for the use of SOx Emissions Control Areas. The MARPOL 73/78 and its Annexes are described above in section 3.3.3. A special area is defined as follows:

«…a sea area where for recognized technical reasons in relation to oceanographical and ecological conditions and the particular character of its traffic, the adoption of its special mandatory methods for the prevention of pollution by oil, noxious liquid substances, or garbage, as applicable is required…»\textsuperscript{369}

MARPOL Special Areas is adopted by IMO upon the proposal of one or more states. Criteria and procedures for the designation of Special Areas are developed under MARPOL and IMO has adopted guidelines for the


\textsuperscript{367} For a detailed discussion on LOS Convention Article 211 (6) see Molenaar, 1998, supra note 14, p. 402-419.

\textsuperscript{368} See Molenaar, 1998, supra note 14, p. 405.

\textsuperscript{369} MARPOL 73/78, Annex 1, Regulation 1, section 11.
Special Areas under MARPOL can cover areas within the territorial sea, the EEZ and the high seas. MARPOL does not provide the coastal States with broader prescriptive jurisdiction, but it allows stricter standards for discharges than what may be adopted by the coastal State on the basis of LOS Convention Article 21 and 211 (5). Such stricter discharge standards, at least the standards adopted under Annex I and II, qualify as GAIRAS and are therefore binding upon all states on the basis of LOS Convention Article 211 (5).

Unlike other areas with sensitive marine environment with sea ice such as the Antarctica and the Baltic Sea, there has not been adopted any special areas under MARPOL in the Arctic region. The adoption of a special area in the Arctic is emphasized as possible measure that should be considered to protect the marine environment. The AMSA report recommends that the need for the designation of special areas under the MARPOL 73/78 is explored.

However, the restrictions on operational discharges that are required within the MARPOL Special Areas require reception facilities. The establishment of Special Areas in the Arctic Ocean is therefore a challenge as there are few ports in this region, which makes it difficult to meet the MARPOL requirements.

5.4.5 Particularly Sensitive Sea Areas (PSSA)

A PSSA is an area of the sea that needs special protection from the impacts of shipping. The concept of PSSA is developed through IMO practice and a PSSA is adopted by IMO on the basis of Guidelines. PSSA is defined in the Guidelines as:

«...an area that needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific attributes, where such attributes may be vulnerable to damage by international shipping activities. »

The concept of PSSA is based on Guidelines and it is not a legally binding concept. This does however, not mean that it is without legal significance. First, a PSSA is protected through associated protective measures that are adopted to ensure the protection of the sensitive area. These protective measures are developed and adopted by IMO and may therefore be legally binding if they are for instance made applicable through SOLAS or MARPOL or another legally binding IMO instrument.

So what are the benefits of designating an area as a PSSA? The designation of a PSSA may have significance as vessels may act more cautious when navigating in the area. Furthermore, the designation process of a sensitive area may in itself be valuable. The sensitivity of the area and the threats from shipping are addressed in a comprehensive way where a broad range of protective measures may be adopted.

5.5 Maritime casualties

5.5.1 General

When a vessel is in distress in Arctic waters due to a maritime casualty several issues or legal questions have to be dealt with, including the search and rescue of the crew, the salvage of the vessel and the prevention of pollution from the vessel of the environment. Casualties in Arctic maritime waters are particularly difficult to handle due to the lack of infrastructure, long distances, climate and the long time to degrade the pollutants. The question is what obligations and rights Norway has as a coastal State in respect of foreign-flagged vessels in distress in areas off its coasts.

A fundamental principle in the law of the sea is the obligation of all to render assistance to persons and vessels in danger at sea. The coastal States have a particular obligation to establish and operate search and rescue service in areas off its coast and to cooperate with neighbouring States and at regional level for this purpose. This obligation will be investigated more in detail in the following section on search and rescue (section 5.5.2). There are separate questions on the salvage of vessels, which will not be addressed in this paper; neither will civil or state liability following marine pollution.

Another consequence of a maritime casualty may be acute pollution or threat of acute pollution that may harm the marine environment. As part of the obligation under the LOS Convention to prevent pollution of the marine environment, coastal States may also be required to take action to prevent, eliminate or control such pollution. This obligation is addressed section on pollution preparedness and response (section 5.5.3). Measures to prevent...
or control acute pollution may include taking control over the vessel; e.g. towing or emptying it from polluting substances. If the vessel is in the EEZ or on the high seas such measures must be based on the right to intervention to be discussed in section 5.5.4. Possible obligations or other legal consequences following the use of the right to intervention (e.g. liability) will not be discussed. Vessels in distress have under certain circumstances right to call at ports or internal waters of the coastal State. However, such right may conflict with the interests of the coastal State to protect its environment. This conflict is also evident in the discussion on the right of intervention. These questions will be addressed in section on place of refuge (section 5.5.5).

5.5.2 Search and rescue

The Arctic coastal States are obligated as Contracting Parties\textsuperscript{382} to the International Convention on Maritime Search and Rescue (SAR)\textsuperscript{383} to establish search and rescue service to ensure that assistance is provided to persons in distress at sea.\textsuperscript{384} The obligation is paralleled with the obligation under SOLAS Regulation V/7. The obligation is specified in regulation V/7 to include the sea areas around the coast of the Contracting party. Under SAR the parties are to cooperate to establish search and rescue regions (SRR) within each sea area.\textsuperscript{385} Within the designated SRR the coastal State has responsibility to provide SAR services and to use its resources to provide assistance to persons in distress.\textsuperscript{386} The oceans are divided into 13 SAR Areas;

\begin{itemize}
  \item 56
  \item 383 Report of the Maritime Safety Committee on its Sixty-Ninth Session, MSC 69/22/Add.1, Annex 3.
  \item 384 SAR Convention, Article 2.1.
  \item 385 SAR Convention, Article 2.1.3, as detailed in Articles 2.1.4-2.1.5.
  \item 386 SAR Convention, Articles 2.1.9 and 2.1.10.
  \item 387 IMO, International Convention on Maritime Search and Rescue
\end{itemize}

Arctic search and rescue agreement areas of application illustrative map. Source: wmo.int

regions, which are divided at 65°N. They stretch from 57° N in the Skagerrak to 82° N in the waters north of Svalbard involving both areas within Norwegian jurisdiction and beyond. The boundary to the west is defined by the Greenwich meridian, and the easternmost boundary is off the coast of Varanger at 31° 43'E.

Contracting parties are further to ensure co-ordination to effectively support search and rescue by establishing search and rescue regions are established within each sea area. Such regions should be contiguous and, as far as practicable, not overlap. They shall enter into agreements on such search and rescue regions. They are further under the SAR Convention required to cooperate, through co-ordinating their search and rescue operations and should, whenever necessary, co-ordinate search and rescue operations with those of neighbouring states. They are recommended to permit other states to undertake search and rescue operations in areas within their jurisdiction. Norway has entered into agreements with neighbouring countries on cooperation and coordination of search and rescue operations; Russia (1995), Finland (1986) and Sweden (2003). A 2008 multilateral agreement on cooperation in emergency prevention for the Barents region is not yet in force. There are also non-legally binding agreements with Denmark and UK.

The basic elements of national SAR services are outlined in the convention: It is to be operated within a legal framework; the responsible authority is to be identified, available resources are to be organised and communication facilities provided. SAR services includes the monitoring, communication, co-ordination and search and rescue functions, including provision of medical advice, initial medical assistance, or medical evacuation, through the use of public and private resources including co-operating aircraft, vessels and other craft and installations. The services include the entire process from monitoring of shipping, communication with vessels, coordination between different actors to the physical search and rescue operations; through the use of vessel and aircrafts. The coastal State is required to have 24-hour basis preparedness for receiving distress alerts and initiate the action necessary in light of available information.

The monitoring and communication elements of the SAR services have to be read in conjunction with other obligations as already referred to under presentation of the SOLAS Convention. They include obligations to inform vessels about the dangers to navigation, to provide meteorological services, undertake hydrographical surveys adequate to requirements of safe navigation and to establish surveillance and communication with vessels. The Arctic Ocean has recently been divided into five so-called NAVAREA/ METAREAs by IMO and other IGOS (World Meteorological Organization and International Hydrological Organization) where Canada, Norway and Russia from summer of 2011 are responsible for providing information to international shipping on navigational and meteorological hazards and other urgent information to shipping. These areas are part of the World-Wide Navigational Warning System (WWNWS) aimed at international coordinating.

The warnings are broadcasted through the Global Maritime Distress and Safety System (GMDSS). As stipulated in SOLAS regulation IV/5 vessels over 300 tons in international voyage are required have radio communication equipment, in order inter alia to receive the abovementioned warnings, send/receive distress alerts and send/receive SAR communication. The coastal State is to provide “...shore-based facilities for space and terrestrial radiocommunication services..."

The equipment requirements are depending on the areas where a vessel is operate, defined on the basis of distance to shore. Vessels operating in Arctic waters are required to use long-range terrestrial and satellite technology. This involves MF equipment as well as VHF - or Inmarsat satellite equipment. The AIS and LRIT system tracking vessels during their navigation transmitted via satellites will also help the coastal State in locating vessels when in distress.

The coastal State responsible for providing search and rescue services within a SRR shall use its available resources to provide assistance to a person who is, or appears

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388 SAR Convention, Chapter 3.
390 SAR Convention, Article 2.1.2.
391 SAR Convention, Article 1.3.3.
392 SAR Convention, Article 4.5.
393 IMO: Expansion of World-Wide Navigational Warning System into Arctic waters marked by IMO, WMO and IHO chiefs, available at www.imo.org/MediaCentre/PressBriefings/Pages/11-arctic.aspx.
394 IMO Resolution A.706(1) World-Wide Navigational Warning System as amended.
The assistance shall be provided regardless of his or her nationality or status of such a person or the circumstances he or she is found. Thus, the coastal State/ Norway has extensive obligations to have adequate search and rescue capabilities to assist persons in distress throughout its two SRRs (between 57° and 82° N), and to conduct such operations. The obligations must be read together with SOLAS regulation V/7 where it is specified that the SAR services may be scaled to the density of traffic and the navigational dangers. As the maritime traffic has been marginal in Arctic this would mean that the Arctic coastal States – including Norway – have more limited obligations in respect of their SRR here than further south. But as the traffic in the region increases, the obligation will become more extensive. The major international shipping routes in the waters off Norway are situated in the southern parts of the Barents Sea. Oil tankers and bulk carriers transit these routes to/from ports in northwest Russia. The maritime density in the waters around Svalbard is low and stable. The maritime traffic includes overseas cruise vessels, local cruise vessels, research vessels, fishing vessels and shipment of coal. The projected increase in maritime traffic in the waters off Norway will come here. However, the growth in passengers on cruise vessels to remote and poorly charted Arctic coastal areas will require that the coastal State/ Norway develop their SAR services in these areas.

As mentioned earlier Norway has finalised a multilateral agreement with the other Arctic coastal States on SAR cooperation in the Arctic Ocean. The new agreement will divide the Arctic Ocean into specific search and rescue regions, where each Arctic coastal State is responsible.

5.5.3 Pollution preparedness and response

The objects of search and rescue operations are the crew and passengers and not the vessel or the prevention of pollution of other damages to the marine environment from the vessel.

Under Article 199 of the LOS Convention, the coastal States are required to take co-operative measures to prevent or minimise damages caused by acute pollution. The 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) is a means to operationalize this obligation. As Contracting Parties, all Arctic Coastal States have a general obligation under the OPRC individually or jointly, to take all appropriate measures to prepare for and respond to an oil pollution incident. It includes incidents involving both vessels and offshore installations. In 2000, a protocol was adopted to expand the OPRC also to include pollution of hazardous and noxious substances (OPRC-HNS Protocol). Only Denmark has ratified/acceded to the protocol. The general obligation under the LOS Convention Article 199 is applicable to all substances qualifying as pollution under its Article 1(4). Norway and the other coastal States would be obligated to combat such pollution in the Arctic waters.

The coastal State is required to establish a national preparedness and response system to respond quickly to situations where oil may be discharged into the sea and pose a threat to the environment or other interests of coastal States. It includes the designation of competent author-

395 SAR Convention, Article 2.1.9.
401 OPRC Convention, Article 1.
403 OPRC Convention, Article 6(1). Oil pollution incident is defined in Article 2(1).
ity. The coastal State is further required individually or in cooperation with other states or the industry to have oil spill combating equipment available appropriate to the risk levels.\textsuperscript{404} The type of equipment and infrastructure required is not specified; oil retention equipment, equipment to collect the pollutant substances, vessels or aircraft. It should also be developed for Arctic conditions. It is left to the discretion of the coastal State to decide. But Norway is obligated to have such infrastructure available to deal with acute pollution on relative short notice; necessarily both on Svalbard and in the northernmost part of Norway. Similarly, with the SAR services the system is to be adapted to the level of risk: It requires another type of preparedness in Northern Norway than on Svalbard, in terms of type and density of traffic and climatic conditions. The preparedness and response system also is to include plans for responding to oil spills and programmes for exercises and training.

The flag states are required under OPRC to ensure that their vessels and offshore units carry a shipboard oil pollution emergency plan.\textsuperscript{405} The vessels are also to report its own or other vessels’ discharges of oil to the nearest coastal authorities, parallel to the duty under MARPOL 74 Article 8 and Protocol 1.\textsuperscript{406} The vessel in distress does not necessarily have to be in a maritime zone under the jurisdiction of the coastal state but in adjacent areas of the high seas. The receipt of the report triggers several obligations: The coastal State is to assess and inform other states about the incident.\textsuperscript{407} There is not an explicit obligation to take action on the basis of these reports to prevent possible pollution of the marine environment. Such obligation may be derived from the general obligation under the OPRC to prepare and respond to an oil incident as well as the obligation to have a system for promptly and effective response to oil pollution incidents.

Similar to the obligation to search and rescue the obligation of the coastal State to take measures to prevent pollution following maritime casualties are dependent on the capabilities and risks. In respect of Norway, it means that the obligation is more extensive in southern parts of the Barents Sea where the traffic density (including transiting oil tankers) and consequently the risk are higher than in the areas off Svalbard. With increased traffic in northern areas, there will be an obligation to have a more extensive preparedness and response system present on the islands. The ban on carriage of heavy fuel on vessels visiting the internal waters and territorial sea must be read in this context as climatic and other circumstances under any circumstance will hamper the effectiveness of such system.

The coastal States are also required to seek to enter into bilateral or multilateral agreements on the matter.\textsuperscript{408} These agreements may specify the obligations under OPRC. The Bonn Agreement is an example of regional multilateral cooperation between the coastal States of the North Sea.\textsuperscript{409} The Agreement is applicable when oil or other harmful substances may pollute or threaten pollute the sea and includes shipping and other activities in the area that may cause pollution. It is applicable to other substances than oil. The parties are responsible for their zones, to keep them under surveillance for threats of marine pollution, including coordinating aerial and satellite surveillance and alert each other on such threats.\textsuperscript{410} The responsibility of the individual coastal State to deal with the pollution is not specified. Other parties are required to respond to requests for assistance.\textsuperscript{411} Norway and Russia has entered into an agreement in 1994 on combating oil pollution in the Barents Sea.\textsuperscript{412} It includes pollution from both vessels and offshore installations in the maritime zones of the parties in the Barents Sea.\textsuperscript{413} Its area of application has been further clarified with the 2010 Barents Sea delimitation agreement where boundaries of both the EEZs and continental shelf have been set.\textsuperscript{414} Under the agreement the parties has a general obligation to assist each other combating oil pollution. The agreement excludes other types of pollution accidents. More specifically each party is to notify the other on oil pollution incidents that may affect the other.\textsuperscript{415} They commit themselves to develop national systems for early detection and warning on oil pollution or danger of pollution and for adequate means to combat such threats.\textsuperscript{416} They have also agreed on a joint preparedness plan as prescribed in the agreement and hold regular exercises.\textsuperscript{417} The 2011 Arctic Search and Rescue Agreement adopted through the Arctic Council is aimed to strengthen search and rescue cooperation and coordination in the region.\textsuperscript{418}

\textsuperscript{404} OPRC Convention, Article 6(2).
\textsuperscript{405} OPRC Convention, Article 3. These plans are detailed in MARPOL 73/78, Annex I, Regulation 37.
\textsuperscript{406} OPRC Convention, Article 4.
\textsuperscript{407} OPRC Convention, Article 5.
\textsuperscript{408} OPRC Convention, Article 10.
\textsuperscript{410} Bonn Agreement, Article 6A and Article 5.
\textsuperscript{411} Bonn Agreement, Article 7.
\textsuperscript{412} Overenskomst mellom Regjeringen i Kongeriket Norge og Regjeringen i Den russiske føderasjon angående samarbeid om bekjempelse av oljeforurensning i Barentshavet, Moscow 28 April 1994, in force 30 January 1996, Overenskomster 1996 s.94.
\textsuperscript{413} 1994 Agreement, Article II.
\textsuperscript{414} Treaty between the Kingdom of Norway and the Russian Federation concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean, Murmansk 15 September 2010, not in force, an English translation is available at http://www.regjeringen.no/en/dep/uid/campaign/delimitation/treaty.html?id=614006
\textsuperscript{415} 1994 Agreement, Article IV.
\textsuperscript{416} 1994 Agreement, Article III.
\textsuperscript{418} Agreement on Cooperation on Aeronautical and maritime Search and Rescue in the Arctic, Nuuk, Greenland 21 12 May 2011, not
The agreement defines and delimits the SAR regions of the eight Arctic States, including the maritime areas. Competent authorities, agencies and rescue coordination centres are identified. The agreement also set out how search and rescue operations are to be conducted, e.g. by applying the SAR and the Chicago Conventions. Further, the agreement regulates procedures when operations cross-state borders and on cooperation on SAR operations. The Emergency Prevention, Preparedness and Response (EPPR) a working group under the Arctic Council is a forum where Norway and the other seven member States can exchange information on practice to prevent accidental pollution in Arctic areas. EPPR does not have any operative tasks. The working group has inter alia developed risk analyses of accidents in the Arctic and maps to indicate where the risk of oil pollution is highest. EPPR is also responsible for a field guide for oil spill response in the Arctic.

The obligations of the coastal State to assist in search and rescue operation and to prevent or control (the subsequent) acute pollution of the marine environment are not particularly clear. This is linked with the precondition of establishing adequate infrastructure to deal with distress and casualties, particularly challenging in Arctic waters. In areas beyond national jurisdiction, the right of the coastal State to intervene may also be more restricted as will shortly be addressed. A new regional agreement to be developed through the Arctic Council within as referred to above in section 3.4.4 may change this.

5.5.4 Right of intervention

The concept of intervention is used to describe use of enforcement measures beyond the territorial sea to prevent or control pollution following a maritime casualty. It relates to the right of the coastal State to exercise enforcement jurisdiction in respect of foreign flagged vessels in areas beyond its national jurisdiction.

A foreign-flagged vessel sailing through the 12 nautical miles territorial sea of Svalbard or of mainland Norway will be exercising the right of innocent passage under the law of the sea as described earlier in this report. Although the territorial sea is subjected to its sovereignty under LOS Convention Article 2 (1), the right of the coastal State to exercise jurisdiction is restricted. It is obligated to exercise jurisdiction as not to hamper the innocent passage. It means the coastal State is to adopt and take measures that will infringe on international shipping. A vessel will still be in innocent passage if it reduces speed or stops due to distress. This status may change if the vessel is about to strand, ground or collide. Vessels not in innocent passage are subjected to the full sovereignty of the coastal State. The coastal State undoubtedly may intervene to prevent or control acute pollution from vessels that are not innocent passage. But innocent passage or not, the protection the marine environment of the coastal State and other relevant interests (e.g. livelihood of coastal communities) will outweigh the interest of international shipping when a vessel is involved in a maritime casualty or incident that may lead to acute pollution or to an imminent threat of such. Under such circumstances, the coastal State may exercise enforcement measures on the basis of its sovereignty to prevent or control such effects. The regard for the right of international navigation is reflected in a requirement of proportionality as regulated in Articles 225 and 232 of the LOS Convention. The coastal State will be liable for damages when measures exceed what is reasonably required.

If a foreign-flagged vessel is involved in a maritime casualty or incident leading to or threatening with acute pollution in an area beyond the 12 miles territorial sea of Svalbard or mainland Norway the situation is somewhat different. The waters beyond the territorial sea off Svalbard are high seas as regards international shipping while there is a 200 nautical miles EEZ off mainland Norway. The jurisdiction of the coastal State over international shipping in the EEZ under Article 56(1) (b) as specified in Article 211 of the LOS Convention does not provide legal basis for intervention. But Article 221 presumes that such enforcement jurisdiction do exist under treaty and general international law. There seems to be agreement that the right of intervention is part of customary international law. The Intervention Convention provides the coastal State a right to take enforcement measures in respect of a foreign-flagged vessel in an area adjacent to its territorial waters involved in a maritime casualty to prevent «grave and imminent» danger to its coastline or related interests from oil pollution. The right has been extended to include pollution from other types of substances. Article 221 includes a lower threshold for intervention than the Intervention Convention and customary international law. In addition to a “without prejudice clause” as Article 221 confirms a right of states to take enforcement measures «…proportional to the actual or threatened damage…» the Intervention Convention and the customary international rule may arguably be read in the context of Article 221. The Intervention Convention

423 LOS Convention, Article 25(1).
429 Ibid. Such argument could be based both on the Lex posterior
is directly applicable to the high seas but it is natural that it also includes the EEZ, as confirmed by LOS Convention Article 221.

The right to intervene arise after a ‘maritime casualty’ involving navigation incidents such as vessel collision to occurrences resulting in material damage or threat of such damages to the vessel or cargo. Neither Article 234 nor the Intervention Convention indicate what enforcement measures the coastal State may take other than they must be proportional to the likelihood of and type or extent of damage or consequences. The interests to be protected include the physical coastline as well as the marine environment, fisheries and other sources of livelihood for the coastal communities. The measures taken will differ from a situation where an oil tanker is sinking in heavy weather at midwinter to a tanker with engine failure 50 nautical miles off Finnmark midsummer. Pollution from an oil tanker poses a larger threat than the bunker oil from a cargo vessel. The measures may thus include everything from the destruction of the vessel, instructing the master to sail a certain route, instructing the master to allow personnel to enter the vessel to undertake necessary repairs to the towing of the vessel. A vessel may be instructed further seawards to prevent possible pollution to the environment of the coastal State to the towing of the vessel to smoother sea where it may be emptied of polluting substances. Such assessments may coincide with those to be undertaken when a vessel requests of port of refuge, to be discussed below. In the end, this is a decision to be taken solely by the coastal State following the weighing of different types of risks. Other measures initiated by the coastal State and/or adopted through IMO such as monitoring of navigation through e.g. AIS and obligatory routeing systems will enable it to identify possible dangerous situation at an early stage and take preventive measures. The enforcement measures may then be of a less radical character. However, Birnie, Boyle and Redgwell suggest that obligations to protect the environment under the LOS Convention may limit the discretion of the coastal State to direct the vessel further seawards. Under any circumstance, the coastal State is required (if possible) to consult with the relevant states (including the flag state) and notify relevant persons.

The same norms are applicable to Arctic waters. An urgent question is whether Norway as a coastal State has the infrastructure available or ability to intervene in these waters to prevent threats of pollution to materialise. The issue should be viewed together with the compliance with the obligations on SAR and oil pollution preparedness. The fragility of the environment, the climatic condition, availability of ice are some of the elements affecting the risk assessments to be undertaken.

The obligations of Norway under the EEA Agreement are also relevant in establishing the legal situation on the prevention of acute pollution following a maritime casualty. The directive on a Community Vessel Traffic Monitoring and Information System included in the EEA Agreement also regulates accidents at sea. Under its Article 19 (1) an EEA member State is obligated to take all measures consistent with international law, to ensure safety and to protect the environment following a maritime accident or incident. These concepts are wider than the concept of maritime casualty under the LOS Convention and the Intervention Convention. Importantly it obligates the coastal State to intervene whereas the two mentioned treaties provide the authorities with competence or right to intervene. Thus, such obligation must be read as an instruction to Norwegian authorities to exercise the jurisdiction where the conditions are fulfilled. But the coastal State is provided a wide margin of appreciation raising the question on the use of such obligation. The measures set out in Annex IV to the directive such as towing and unloading are non-exhaustive. The provision is not applicable to the territorial sea off Svalbard since its territory is exempted from the EEA Agreement. Another question is whether this is the case with the high sea are beyond the 12 nautical miles.

5.5.5 Places of refuge

Vessels do not enjoy a general right to call at ports of other states. The right under general international law to seek refuge in port in cases of distress or force majeure law is recognized as an exception. The right is also linked to the general principle of a duty to render assistance as reflected in the LOS Convention.

The right of access to port or internal waters of vessel in cases of distress has a long history in general international law. The right has been put on the agenda in recent years due to major maritime accidents such as Erika and Prestige with subsequent oil spills causing damage to the environment and to the livelihood of the coastal population. The increasing risk of modern shipping to the environment and to coastal State interest may have affected the conditions for and consequently restricting the right. Chircop has identified criteria under

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435 EEA Agreement, Protocol 40.
437 LOS Convention, Article 98.
440 Chircop, 2006, supra note 440, p.222-228.
international customary law for a right of access. A vessel may qualify for the right to access calmer waters due to bad weather conditions as well as due to its own condition (vessel safety). The right does not only apply to the crew but also to the vessel and its cargo. However, where the vessel has constituted a risk to the coastal State, e.g. the public health, the coastal State has been competent to set conditions to prevent the threat even meaning a ban to enter its internal waters. The risk of pollution from vessels in poor conditions conflicting environmental and socio-economic damages has been added as a new type of risk to be considered by the coastal State. The right and obligation to protect its own marine environment is a legitimate and essential interest. The consequence is that the right to access port or internal waters for vessels in distress is not absolute.

The paradox that the coastal State by providing vessels places of refuge could within its internal waters prevent more extensive consequences such as pollution of the marine environment than if they were refused access; is recognized in the 2003 IMO guidelines on places of refuge. These guidelines were preceded by an EU directive applicable to Norway through the EEA Agreement requiring the states to develop plans for places of refuge. These plans were to include procedures as well as measures to accommodate places of refuge. The EU legislation (not yet applicable through the EEA Agreement) has been amended to inter alia to accommodate for the 2003 IMO guidelines. More detailed regulations have been set restricting the discretion of the member States.

The IMO guidelines and the EU directive set out procedural requirements directed to the individual coastal State; from identifying suitable places of refuge, obtaining relevant information, undertaking balanced assessments and conclude with a decision. It is recognised in the IMO guidelines that it is not possible to provide a fixed norm on a right to place of refuge. In the end, it is a «political decision» to be taken on a «case-by-case basis», balancing of the different interests at stake. The objective of the IMO guidelines is therefore to provide a «framework» enabling both sides (vessel and coastal States) to respond effectively and complementary to an incident or accident. Neither the EU directive includes an explicit obligation to accept requests for place of refuge. But by establishing comprehensive procedures, including identification of suitable places and decision-making the discretion of Norway, Iceland and EU member States to refuse vessels place of refuge are clearly been limited. Provisions are designed pointing towards the taking of a positive decision. The coastal State seems to have the burden of proof that the vessel does not qualify for a place of refuge.

Although they are not binding, the IMO guidelines may through its practice provide a standard of due diligence gradually limiting the discretion of the coastal State. In that respect the EU directive, also applicable to Norway (but not Svalbard) through the EEA Agreement, includes legal obligations on Norway in respect of providing places of refuge to vessels in need of assistance. The IMO guidelines will indirectly involve international legal obligations for Norway as far as they are implemented through EU/EEA legislation.

The IMO guidelines and the EU directive refer both to vessels «…in need of assistance» and not in «distress». It is defined as «ship in a situation, apart from one requiring rescue of persons on board that could give rise to loss of the vessel or an environmental or navigational hazard.» This suggests that the assessment of the situation and possibly the decision on access to a place of refuge is to be undertaken at an earlier stage before the situation has evolved to distress. The concept of «place of refuge» is defined functionally in the IMO guidelines: as a place where a vessel may take action to «…stabilize its condition and reduce the hazards to navigation, and to protect human life and the environment.» It has been specified in the EU directive to include port and «…any other sheltered area identified by a Member State for accommodating ships in distress.» It does not necessary have to be a port but another place in the internal waters designated by the coastal State.

The IMO guidelines are directed at both the vessel and the coastal State. The master of the vessel is to identify the reasons why it is in need of assistance, the consequences of potential casualty if the vessel remains in the same position and what assistance it is in need of. This information is to be transmitted to the relevant coastal State. On the other hand, the coastal State is to establish procedures for handling such requests, including empowering the competent bodies. While coastal States are requested under the IMO guidelines to provide for a Maritime Assistance Service servicing as a «point of contact» between the vessel and the coastal State, the EU directive goes further in detailing the competence of relevant bodies.

444 Ibid, paragraph 1.12
446 Directive 2009/17/EC Article 20b: “…the authority or authorities shall ensure ships are admitted to a place of refuge if they consider such an accommodation the best course of action for the purposes of the protection.”
449 IMO guidelines, paragraph 1.18; Directive 2009/17/EC, Article 1(2) (v).
450 IMO guidelines, paragraph 1.19.
451 Directive 2002/59/EC Article 3(m).
452 IMO Guidelines, paragraphs 2.1-2.5.
of the coastal State. The coastal States are required to designate «…authorities which have the required expertise and the power, at the time of the operation, to take independent decisions on their own initiative concerning the accommodation of ships in need of assistance». The purpose is to ensure – in a time of urgency – clear lines of responsibility in the coastal State that the necessary assessments are undertaken in a proper, fast and efficient manner.

The IMO guidelines involve two sets of procedures for assessments of places of refuge, also to be included in the plans of accommodation to be developed by the EU/EEA member States. The first involves the identification of possible places of refuge on the basis of assessments of the advantages and disadvantages of accepting a vessel to this area. The different risk factors to be assessed span from environmental and social factors, natural conditions, the available preparedness resources of the coastal State to possible scenarios. The second procedure is applicable in the individual case where risk assessment is to be undertaken based inter alia of the seaworthiness, type of cargo, number of crew and insurance coverage of the vessel and the concrete risks posed by the vessel. Subsequently, the coastal State is to compare the risks by leaving the vessel at sea with the risks by giving it a place of refuge. This comparison includes the assessments of risk of pollution, effects to neighbouring countries and safety of persons.

The final decision is to be based on the weighing of all the factors and risks in a «balanced manner». Where reasonably possible, the request should be accepted. The purpose is to ensure – in a time of urgency – clear lines of responsibility in the coastal State that the necessary assessments are undertaken in a proper, fast and efficient manner.

The enforcement jurisdiction over violation of rules adopted to prevent pollution is specified in Article 220 (2). It follows from this provision that the coastal State may where «…there are clear grounds for believing…» that a vessel navigating in the territorial sea has violated regulations adopted for the «…prevention, reduction and control of pollution…undertake physical inspection of the vessel relating to the violations…». If the evidence so warrants the coastal State may «…institute proceedings, including detention of the vessel…». In this case, the general safeguards in Section 7 in the LOS Convention Part XII apply; see section 4.3.4 where certain aspects of this are discussed.

It is the flag State that has the jurisdiction to enforce violations that take place within the EEZ of another state. The coastal State is however, provided with limited enforcement jurisdiction over regulations adopted for the purpose of preventing and reducing pollution from vessels. The relevant provisions are Article 220 (3), (5) and (6).

The enforcement jurisdiction in the provisions is limited to situations where there are «…clear grounds for believing…» or «…clear objective evidence…» of a violation.

453 IMO Guidelines, paragraphs 3.3 and 2.4. The functions of the Maritime Assistance Services is further detailed in IMO Resolution A.950(23) Maritime Assistance Services (MAS), Adopted on 5 December 2003.
455 Directive 17/2009/EC Article 20a (2). Under its c), the plans are to include information on the coastline of Member States and all elements facilitating a prior assessment of the place of refuge, while the plan under its d) is to include the procedures for the assessment in the individual case.
456 IMO guidelines, paragraphs 3.4-3.8.
457 IMO Guidelines, Appendix 2, paragraph 2 as referred to in paragraph 3.5.
458 IMO Guidelines, paragraphs 3.9-3.11.
459 IMO Guidelines, paragraph 3.11
464 About this see Ringbom, 2008, supra note 15 p. 387.
465 See LOS Convention, Articles 94 and 220 (4).
The intensity of the enforcement, what measures the coastal State may take, depends on how serious the violations have.\textsuperscript{466}

According to Article 220 (3), the coastal State may when there are «…clear grounds for believing…» that a vessel in the EEZ has «…committed a violation of applicable international rules and standards for the prevention, reduction and control of pollution…» require the vessel to give information about its identity, route and information to establish whether there has taken place any violation.

Article 220 (5) establishes that when a violation or the possible violations has resulted in a «…substantial discharge causing or threatening significant pollution…», the enforcement jurisdiction may cover the right to undertaking physical inspection of the vessel.

It is only according to Article 220 (6) when «…there is clear objective evidence» of a violation …resulting in a discharge causing major damage or threat of major to the coastline or related interests of the coastal State…» that the coastal State may, provided that the evidence so warrants «…institute proceedings, including detention of the vessel…» In such cases, the general safeguards in section 7 of Part XII of the LOS Convention apply.

As the enforcement jurisdiction, especially in the EEZ is so limited, it is difficult to ensure that the regulations adopted for protecting the Arctic marine environment are effective. Violations of routing measures, such as regulations requiring that certain vessels that carry dangerous cargo have to follow a certain sea route, are for instance not possible for the coastal State to enforce in the EEZ.

\textsuperscript{466} See Ringbom, 2008, supra note 15 p. 391.
6 Regulation of Arctic marine shipping by other coastal States

6.1 General

The purpose of this part is to investigate what measures other coastal States have taken to regulate shipping in their maritime zones. The presentation will be limited to the particular measures the Russian Federation and Canada has taken to regulate navigation in Arctic waters. For natural reasons, they have come furthest in developing legislation on these issues. It should also be noted that Canada was among the initiators to what became Article 234 of the LOS Convention.

Until recent years, international shipping has been limited to seasonal navigation through the Northwest Passage (NWP) and the Northern Sea Route (NSR) due to the sea ice conditions. As pointed out in the AMSA report the traffic is still modest due to the prevailing sea ice conditions. The regulations of shipping activities have primarily focused on the coastal areas. If the sea ice cover decreases even further new shipping routes beyond the Northwest Passage and the Northern Sea Route may become feasible challenging present regulations by both the coastal States and those agreed through different IMO instruments.

The jurisdiction claimed by Canada and the Russian Federation over international shipping in the NWP and the NSR is controversial.\textsuperscript{467} While Canada argues that all of the NWP are within its internal waters; Russia has claimed that important straits are part of its internal waters. They both argue on the basis of historical title but have established straight baselines as an alternative legal basis for claiming sovereignty over these areas. Other states – in particular – USA – has protested and argues that both NWP and NSR qualify as international straits where other states have a right of transit. They claim that neither Russia nor Canada fulfill the requirements of historical title nor of the straight baselines.\textsuperscript{468} The jurisdiction of coastal States over foreign vessels in international straits is limited. On the other hand, the US claim that the two passages are international straits is also controversial. As the numbers of foreign flagged vessels navigating through the straits have been modest the functional criteria («strait used for international navigation») is arguably not met.\textsuperscript{469}

Even if these waters should qualify as international straits or foreign-flagged vessels have a right of innocent passage through territorial waters, the coastal States still may enjoy extensive jurisdiction over these vessels. The (alternative) legal basis would be the LOS Convention Article 234 on ice-covered waters discussed above under chapter 5, which is arguably applicable to straits as well as the territorial sea. As will be shown both Canada and the Russian Federation base their legislation on this provision. Under Article 234, the coastal State may adopt and enforce legislation to prevent pollution from vessels in ice-covered areas. There are further criteria that the combination of severe climatic conditions in combination with presence of ice for most of the year creates obstacles or hazards to navigation. It is also assumed that pollution within these areas could cause major damage or irreversible disturbance to the marine environment. The criteria are not straightforward prompting different and conflicting proposals for its interpretation. As the sea ice gradually retreats opening for more shipping in the Arctic paradoxically the application of Article 234 may become more relevant but also controversial. Unless multilateral approaches are found, it will be the Arctic coastal States that in the end are left to interpret and apply Article 234 through its maritime legislation. The LOS Convention provides for peaceful resolution of disputes on its interpretation and application.\textsuperscript{470}

6.2 The Russian Federation

6.2.1 General

The Northern Sea Route (NSR) is not a specific sea route but a maritime area between the island of the Novaya Zemlya islands in the west and the Bering Sea in the east and limited northwards. Another description of the Arctic Russian seaways is the Northeast Passage. They are not identical as the NSR is part of the larger Northeast Passage.\textsuperscript{471} The NSR is defined or delimited in the 1990 Northern Sea Routes Navigation Regulations.\textsuperscript{472}

The reference to routes (plural) in its title reflects that different routes may have to be used due to changing ice conditions.\textsuperscript{473} The NSR includes the internal waters,


territorial waters and the EEZ of the above-mentioned area. The definition may also be interpreted according to Franckx to include parts of the high seas of the Arctic Ocean. This reading is supported by several Russian academics arguing that it is impossible to enter high seas routes without navigating through Russian waters. Supposedly, this gives Russia adequate legal basis to regulate foreign shipping in the adjacent areas of the high seas. The static character of CDEM rules and standards unilaterally set by Russia for foreign vessels while in its waters necessarily will apply to the vessels as they proceed into the high seas. Such unilateral rules and standards in the EEZ and the territorial sea may have adequate legal basis in Article 234 of the LOS Convention. However, the law of the sea does not provide Russia or other Arctic coastal States with jurisdiction to regulate the operation of foreign-flagged vessels on the high seas. They are neither competent to regulate operational discharges nor the navigation. The vessels are subjected to the exclusive jurisdiction of the flag state while on the high seas.

The regulation of the navigation of foreign vessels through the NSR has legal basis in Russian federal legislation. Under Article 32 of the Federal Act on the Exclusive Economic Zone an almost verbatim repetition of Article 234 of the LOS Convention, legislation may be adopted and enforced to prevent marine pollution. The limits of the areas to which such legislation is made applicable are to be specially announced. This reflects that the legislation may only be made applicable within areas where the conditions set in LOS Convention Article 234 are met. Franckx argues that this opens for extending these areas and thus the 1990 Regulations beyond the EEZ. However, Article 32 itself includes a geographical limitation as the relevant areas are «within the limits» of the EEZ. In contrast to the Russian EEZ Act, the Federal Act of 1998 on the internal waters, the territorial sea and contiguous zone includes an explicit reference to the NSR in a special provision. Although not defining the area of the NSR vessels the navigation through its routes is to be exercised in accordance with Russian legislation and relevant international agreements. One reason for the omission may be that the main routes are passing through the territorial sea or internal waters. It is worth noting that the NSR is described as the «historical national unified transport line of communication». The rationale is probably that at least parts of the NSR, particularly the straits identified in the provision (Vilkitsky, Shokalshy, Dmitry Laptev and Sannikov) are claimed as internal waters because they are considered historical straits. The provision appears as lex specialis to the preceding provisions outlining the right of innocent passage. It suggests that foreign vessels are only entitled to navigate the NSR part of the territorial sea on the conditions set by Russia.

The above-mentioned provision also includes a reference to the regulations on navigation on the watercourses of the Northern Sea Route thus providing them with legitimacy under this act. In the following, the focus will be on these regulations. There is an ongoing work on amending the legislation on the NSR.

479 Federal Act of 17 July 1998 on the Internal Maritime Waters, the Territorial Sea and Contiguous Zone of the Russian Federation: Article 14 Navigation on the waterways of the Northern Sea Route Navigation on the waterways of the Northern Sea Route, the historical national unified transport line of communication of the Russian Federation in the Arctic, including the Vilkitsky, Shokalshy, Dmitry Laptev and Sannikov straits, shall be carried out in accordance with this Federal Act, other federal laws and the international treaties to which the Russian Federation is a party and the regulations on navigation on the watercourses of the Northern Sea Route approved by the Government of the Russian Federation and published in Notices to Mariners. This English translation is available at: www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILESRUS_1998_Act_TS.pdf.

480 Tymchenko, supra note 476, (2001), p. 278-279. Under Article 1(2) of The Federal Act on Internal Waters, Territorial Sea and Contiguous Zone the straits that have historically belonged to Russia are part of its internal waters. Article 4(1) regulates the use of straight baselines in these cases. The base points of the strait baselines enclosing these straits are adopted in the 15 January 1985 Decree of the USSR Council of Ministers, an English translation is available at www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILESRUS_1985_Declaration.pdf.

481 Articles 10-13.


476 LOS Convention, Article 92(1).

477 1998 Federal Act on the Exclusive Economic Zone of the Russian Federation: Article 32Protection and preservation of ice-covered areas With regard to areas which are within the limits of the exclusive economic zone and where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance, the Russian Federation may adopt and enforce federal laws and other regulations for the prevention, reduction and control of marine pollution. Such federal laws and other regulations shall have due regard to navigation and the protection and preservation of the marine environment and the natural resources of the exclusive economic zone based on the best available scientific evidence. The limits of such areas shall be published in Notices to Mariners. An English translation of the Act is available at: www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILESRUS_1998_Act_EZ.pdf.

6.2.2 The regulation of navigation

The 1990 Northern Sea Routes Navigation Regulations\footnote{Rules of Navigation: Regulations for Navigation on the Seaways of the Northern Sea Route, Approved by the USSR Minister of Merchant Marine 14 September 1990.} are to be supplemented by the Icebreaker and Pilot Guiding Regulations\footnote{Rules of Navigation: Regulations for Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route, an English translation is available at www.morflot.ru/about/sevmorput/index.php.} and the Requirements for the Design, Equipment and Supplies,\footnote{Requirements for the Design, Equipment and supplies of Vessels navigating the Northern Sea Route, an English translation available at http://www.morflot.ru/about/sevmorput/index.php.} both adopted in 1996.\footnote{This according to Franckx, supra note 479, (2009), p. 330-331.} In the following these regulations will be presented based on the following themes: right to navigate, vessel and crew requirements, regulation of navigation and enforcement.

The objective of the 1990 Northern Sea Routes Navigation Regulations, applicable to the EEZ as well as to the territorial sea and the internal waters is to ensure safety of navigation and to prevent marine pollution from vessels.\footnote{Regulations for Navigation on the Seaways of the Northern Sea Route, Regulation 2.} Their reasoning is integrated in the text referring to the «severe climatic conditions» and the «presence of ice during the larger part of the year» which create obstacles to navigation and may cause damage to the environment.\footnote{Ibid.} The wording strongly resembles that of Article 234 of the LOS Convention suggesting that Article 234 provides international legal basis for regulating navigation not only in the EEZ as referred to above but also in the territorial sea.\footnote{Franckx, supra note 479, (2009), p. 339-340.} As we will see, the measures included in these regulations as supplemented by the 1996 regulations and requirements support this reading as they go further than those available to the coastal State under the LOS Convention.

A right to navigate through the NSR?

Foreign-flagged vessels are not automatically permitted to access and navigate through the NSR. They are required at least four months before the scheduled journey to apply in writing to the Marine Operations Headquarters for guiding through the NSR.\footnote{Regulations for Navigation on the Seaways of the Northern Sea Route, Regulation 3 as detailed in Regulation 2 of the Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route.} Further, the vessels are required to fulfil special requirements and the masters of the vessels are required to have experience navigating in ice.\footnote{Regulations for Navigation on the Seaways of the Northern Sea Route, Regulation 5.} Violations of these regulations may qualify for expulsion from the NSR (i.e. the territorial sea and the EEZ).\footnote{Regulations for Navigation on the Seaways of the Northern Sea Route, Regulation 10.} Vessels are in addition, to have on board certificate of adequate security for possible liability.\footnote{Regulations for Navigation on the Seaways of the Northern Sea Route, Regulation 10.} They are also required to pay for the services they are provided, according to the cargo transported. As the navigation through the NSR is subjected to several extensive qualifications it may hardly be characterized a (substantial) right. Perhaps it is more appropriate to denote it a right of non-discrimination? Such restrictions are contrary to the navigational rights of vessels in territorial sea, straits and the EEZ under the Law of the Sea. The legality of the measures in restricting such navigational rights must be assessed in light of the requirements under LOS Convention Article 234 inter alia that national legislation shall have due regard to navigation. Consequently, any restriction on foreign vessel navigation in the NSR must be based on an objective and proportionate application of the criteria under Article 234.

Vessel and Crew Requirements

The 1990 Regulations are supplemented by the 1996 Requirements for the Design, Equipment and Supplies of Vessels navigating the NSR.\footnote{Requirements for the Design, Equipment and Supplies of Vessels navigating the Northern Sea Route, available in English at www.morflot.ru/about/sevmorput/index.php.} Vessels above 300 tons navigating the NSR are required to comply with these requirements.\footnote{Ibid., paragraph 2.1.} They are also to be constructed and in-
tended for navigation in ice-infested areas as qualified by the ice-classes of the Register of Maritime Shipping (Arc4-6), which corresponds to the IACS Polar Class 5-7. A vessel in Polar Class 5 is constructed to operate year-round in medium first-year ice which while a vessel in Polar Class 7 may be involved in summer/autumn operations in thin first-year ice. The Administration of the Northern Sea Route may decide only to allow vessels to limit the navigation of vessels corresponding to Polar Class 7 to navigate in the western parts of the NSR and along specific parts of the Eastern area under the supervision of ice-breaker.

The 1996 Requirements include other conditions on the construction and design such as on the hull and machinery of the vessel. The vessels are to have a double-bottom floor throughout its entire width. Tanks in a double bottom and double-sides may not be used for storage of petroleum products or other harmful substances. Further, the cargo tanks of tankers with deadweight greater than 5000 tons used to transport petroleum products must be situated at a distance the vessel hull. Together with the stability requirements, the objective is to ensure that damages to the ship not necessarily lead to the sinking of the vessel with consequently negative effects on the environment. Vessels are to be equipped to prevent discharges of petroleum from bilge water and sewage. The bilge separator shall ensure that the discharge does not exceed 1 to 15 million. The vessel are to install tanks on board able to store wastewater on board and to store for at least 30 days bilge, rinse, and ballast water that is contaminated with petroleum products. There is otherwise a general ban on discharges of pollutant substances at sea (including garbage).

In addition to standard means of navigation vessels are inter alia to be equipped with gyroscopic compass and fathometer and vessels larger than 1600 tons must be provided with two radar sets that operate independently of each other. Further, all vessels must be equipped with a receiving display of a radio navigation or satellite navigation system that makes it possible to determine the position of the vessel to within at least 100 m at a 95% probability. In addition to ordinary means of radio communications, all vessels must be provided with ground station for satellite communications.

There are few if none opportunities for re-supplying in port during the voyage through the NSR. Therefore, the vessels are required to be provided with a double store of fuel and lubricants. For the same reasons the vessels are also to have on board adequate spare parts, emergency supplies and fire-fighting equipment.

The 1996 Requirements supplements the conditions for the manning of the vessels. The crew must be large enough to handle a three-shift watch. Further, the master of the vessel is required to have a minimum of experience in navigation through ice.

Regulation of navigation

The voyage through the NSR is neither unrestricted as the vessel is subjected to several and the instruction of the administration throughout the journey. As described above the period and the areas a vessel may be permitted to sail is dependent on its ability to navigate in ice-covered areas (whether ice-classed). The vessels are obligated to be guided throughout the whole journey. Guiding means that the navigation of the vessel is controlled by the Marine Operations Headquarters, charged with coordinating vessel traffic, providing vessels with information and taking decisions on the use of types of guidance. The type of guiding required depends on ice, weather and other relevant conditions. There are different types of guiding: guiding from shore, from air, through pilotage and icebreaker guiding. But it is mandatory to have two pilots on board throughout the whole journey. Ice-breaker guidance and ice pilot are mandatory through specific areas (Proliv Vil’kitskogo, Proliv Shokal’skogo, Proliv Dmitriya Lapteva and Proliv Sannikova). The vessel is required to comply with the instructions of the icebreaker. The master remains responsible for the manoeuvres of the vessel during the guiding. The two Marine Operations Headquarters for the eastern and western part of the NSR respectively are also responsible for providing vessels on navigational information (e.g. ice) and rescue service.

496 Requirements for the Design, Equipment and Supplies of Vessels navigating the Northern Sea Route, paragraph 2.2.
498 International Association of Classification Societies (IACS), Requirements concerning POLAR CLASS, 2007.
499 Requirements for the Design, Equipment and Supplies of Vessels navigating the Northern Sea Route, paragraph 2.2.
500 Ibid, paragraphs 3 and 4.
501 Requirements for the Design, Equipment and Supplies of Vessels navigating the Northern Sea Route, paragraph 6.
502 Ibid, paragraph 5.1-5.2.
503 Regulations for Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route, Regulation 2.6.
504 Requirements for the Design, Equipment and Supplies of Vessels navigating the Northern Sea Route, paragraph 7.
505 Ibid, paragraph 8.1.
506 Ibid., paragraph 8.2.
507 Ibid., paragraph 9.
510 Regulations for Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route, Regulation 1(4).
511 Regulations for Navigation on the Seaways of the Northern Sea Route, Regulation 7.4.
512 Regulations for Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route, Regulation 2(23)-(24).
513 Ibid, Regulation 3.2.
514 Regulations for Navigation on the Seaways of the Northern Sea Route, Regulations 8.2 and 8.3.
Further, a vessel is required to follow the routes assigned to it by the Marine Operations Headquarters and should not deviate considerably from it.\textsuperscript{515} It is also obligated to be in radio contact with the headquarters during the voyage.\textsuperscript{516} There are special regulations on communication between vessels and these headquarters.\textsuperscript{517}

The navigation through specific parts of the NSR may be temporarily suspended if necessary for the protection of the marine environment or ensuring maritime safety.\textsuperscript{518}

**Enforcement**

Administrative enforcement of the abovementioned requirements are provided for in the regulations. Vessels are to be inspected at the entry of the NSR whether they comply with the requirements presented above. These inspections may be undertaken in designated ports. A decision to permit the vessel to navigate the NSR is taken based on the outcome of the inspection. The vessel may also be subjected to inspections during the navigation.\textsuperscript{519} It is particular relevant where there is unfavourable weather or ice conditions threatening the vessel.\textsuperscript{520} The purpose of the inspection in such cases is not clear but it is presumably to find out whether the vessel is capable of navigating safely through these waters. Also a threat to the marine environment provides cause for inspection. If meant to supplement the other causes it could include situations where the vessel in question has been involved in incidents or accidents giving reasons for such concerns.

If a vessel does not comply with the requirements under the 1990 and 1996 Regulations it may be expelled from the NSR.\textsuperscript{521} It would be the case if an inspection reveals that the vessels has not permission to navigate the NSR or it does not comply with the pre-dominantly the CDEM rules and standards established under the 1996 Requirements. If a vessel does not accept the types of guiding assigned to it by the Marine Operations Headquarters, it is considered a violation of orders and it may be subjected to expulsion from the NSR.\textsuperscript{522}

6.3 Canada

6.3.1 General

Canada has been in the forefront in adopting legislation specific to Arctic marine shipping. It took initiative to what was to become Article 234 of the LOS Convention to provide adequate international legal basis for its 1970 Arctic Waters Pollution Prevention Act (AWPPA).\textsuperscript{523} This presentation is somewhat different organised than the previous as the legislation is geographical rather than thematic defined. First, the AWPPA is addressed, which not only regulate operational discharges but also CDEM rules and standards and indirectly also navigation. Secondly, and partly overlapping is the regulations adopted under the Shipping Act requiring vessels to report on their entry and navigation through the Canadian Arctic waters as well as the mandatory navigational equipment required of vessels operating in these waters.

Both the AWPPA and parts of the Shipping Act are applicable to foreign vessels navigating through the Canadian EEZ, territorial sea and internal waters as defined in the Oceans Act. The regulations are identical irrespective of whether the vessel is navigating in the EEZ or in the territorial sea indicating that they are based on the same legal basis: Article 234 of the LOS Convention. It was explicitly stipulated in the declaration of Canada at the accession to the 1978 MARPOL Protocol.\textsuperscript{524} Referring to Article 234 Canada declared that it was competent under international law to adopt and enforce special legislation to prevent pollution from vessels in ice-covered areas. The accession to MARPOL 73/78 did not prevent Canada from adopting stricter rules and standards.\textsuperscript{525}

6.3.2 AWPPA: Prevention of marine pollution through regulation of discharges, CDEM rules and standards and navigation

The objective of AWPPA is to prevent pollution of areas of the arctic waters adjacent to the mainland and islands of the Canadian Arctic and provides for regulation of both navigation and CDEM rules and standards.\textsuperscript{526} Therefore there will not be made any attempts to distinguish between the different types of regulation. Originally applicable to 100 nautical miles the geographical area of application has been extended to 200 nautical miles as «arctic waters» include the internal waters, territorial waters and the exclusive economic zone of Canada.\textsuperscript{527}

\textsuperscript{515} Ibid, Regulations 7.2 and 7.3 and Regulations for Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route, Regulation 4.6.

\textsuperscript{516} Regulations for Navigation on the Seaways of the Northern Sea Route, Regulation 7.5.

\textsuperscript{517} Franckx, supra note 479, (2009), p. 341.

\textsuperscript{518} Regulations for Navigation on the Seaways of the Northern Sea Route, Regulation 9.

\textsuperscript{519} Requirements for the Design, Equipment and Supplies of Vessels navigating the Northern Sea Route, paragraphs 2.11-2.16 and Regulations for Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route, Regulation 2.4.

\textsuperscript{520} Regulations for Navigation on the Seaways of the Northern Sea Route, Regulation 6.1.

\textsuperscript{521} Regulations for Navigation on the Seaways of the Northern Sea Route, Regulation 10.

\textsuperscript{522} Regulations for Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route, Regulation 2.17.


\textsuperscript{524} VanderZwaag et al, supra note 192, (2008), p.52.

\textsuperscript{525} IMO: Status of Multilateral Conventions and Instruments in Respect of which the International Maritime Organization or its Secretary-General Performs Depositary or other Functions, as 31 December 2010, p. 116, available at http://www.imo.org/About/Conventions/StatusOfConventions/Documents/Status%20-%202010.pdf.


\textsuperscript{527} AWPPA, Section 2, cf. Section 3(1). Further specification as to
Operational discharges
Under the AWPPA there is a general ban on deposit from people and vessels of any kind of waste into the arctic waters.\(^{528}\) Waste is defined broadly as a substance that will affect quality of water to the extent that it «…is detrimental to their use by man or by any animal, fish or plant that is useful to man».\(^{529}\) It may include all the substances regulated through the MARPOL 73/78 annexes I-V. In the regulation adopted under AWPPA an exception is made to sewage generate during the voyage.\(^{530}\) Oil or oily mixture may is only to be deposited if necessary to save lives or the vessel or in other types of maritime casualties. The deposit or discharges of other substances are thus prohibited from vessels within the 200 miles EEZ of Canada.

The zone/date system: CDEM rules and standards and regulation of navigation
The AWPPA provides for the establishment of Shipping Safety Control Zones within the arctic waters.\(^{531}\) 16 safety control zones have been established.\(^{532}\) Zone 1 has the most severe ice conditions and Zone 16 the least.\(^{533}\) Within each of these control zones regulations may be adopted prohibiting vessels from navigation if their class does not comply with specific CDEM rules and standards, requirements on permitted cargo as well as ban on navigation during one or more periods of the year.\(^{534}\) This provides for a zone/date system which is detailed under the regulation.\(^{535}\) Vessels carrying more than 453m3of oil are permitted to navigate through the zones if they meet prescribed construction standards. There are 14 categories of vessels (nine Arctic classes and type A, B, C, D and E vessels) based on their ice capacity.\(^{536}\) The earliest and latest dates for entry each of control zones are set corresponding to the ice capability of vessels.\(^{537}\) The zone/date system is not permitted to navigate through the zones with most severe ice conditions all year and only in the summer seasons in the other zones. The zone/date system is not adapted to variations in ice conditions. The consequence is that a vessel would be allowed through a zone with ice beyond its structural capability. In another year, the system could prevent ships from transiting areas, which are completely free of ice.\(^{538}\) Therefore the regulations have been amended to provide for more flexibility with their operations through the introduction of the Arctic Ice Regime Shipping System (AIRSS) Standards.\(^{539}\)

Vessels navigating regularly in the Arctic waters may acquire an «arctic pollution prevention certificate» documenting that it satisfies the requirements of the AWPPA and its regulation.\(^{540}\)

All oil tankers navigating through any of the shipping safety zones are obliged to have an ice navigator on board.\(^{541}\) The ice navigator is to be qualified as a master or similar and have experience from navigation in ice-covered areas.\(^{542}\) When navigating through the zone with the most severe ice conditions the navigator is required to have more experience.\(^{543}\)

Enforcement
The AWPPA also provides for enforcement of compliance with its provisions and regulations and for sanctions in cases of violations. A ‘pollution prevention officer’ is charged with controlling the vessel. He/she may board a vessel within a safety control zone and undertake the necessary inspection to determine whether the vessel complies with the applicable rules and standards.\(^{544}\) If a vessel does not meet the rules and standards applicable to the zone it may be ordered out of the zone.\(^{545}\) This would be the case if the vessel belong to a class which according to the zone/date system is not permitted to navigate through the zone. Violations by vessels of AWPPA (deposit of wastes or violations of rules and standards for safety control zones) are sanctioned with fines.\(^{546}\)

6.3.3 The Shipping Act: Navigational equipment, mandatory reporting scheme and port State control

Arctic navigational equipment
Under the Navigation Safety Regulations established under the Shipping Act foreign-flagged vessels are required to comply with the of chapter V on safety of navigation of SOLAS.\(^{547}\) Special equipment requirements

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\(^{528}\) AWPPA, Section 4.

\(^{529}\) AWPPA, Section 2.


\(^{531}\) AWPPA, Section 11.


\(^{534}\) AWPPA, Section 12.

\(^{535}\) Arctic Shipping Pollution Prevention Regulations, Sections 6 and 26.

\(^{536}\) Arctic Shipping Pollution Prevention Regulations, Section 2 (definitions) and Schedule V (types A-E vessels), Schedule VI (Hull requirements Arctic class) and Schedule VII (Machinery requirements Arctic class).

\(^{537}\) Arctic Shipping Pollution Prevention Regulations, Schedule VII.

\(^{538}\) Canadian Coast Guard, 1999, supra note 247, p. 149-150.

\(^{539}\) Arctic Shipping Pollution Prevention Regulations, Section 6(3).

\(^{540}\) Arctic Navigation Safety Regulations, Section 26(2).

\(^{541}\) Ibid, Section 6(7) (b).

\(^{542}\) Arctic Shipping Pollution Prevention Regulations, Section 6(7) (b).

\(^{543}\) Ibid.

\(^{544}\) AWPPA, Section 15(4).

\(^{545}\) Ibid.

\(^{546}\) AWPPA, Section 18(1) and 19(2).


\(^{548}\) Navigation Safety Regulations, Section 3, SOR/2005-134, availa-
are set for vessels navigating within the shipping safety control zones.\textsuperscript{549} It includes requirements on installation and use of certain types and numbers of gyrocompasses, radar and echo-sounding equipment. Vessels which do not comply with the requirements of the regulation are prohibited from navigating within the safety control.\textsuperscript{550} The enforcement and sanctions provisions of the AWPPA referred to above are applicable.\textsuperscript{551} A vessel without adequate equipment may thus be ordered out of the Canadian arctic waters.

The NORDREG reporting scheme

In 2010 the Canadian Government introduced a mandatory reporting scheme for vessels navigating in the NORDREG zone (Northern Canada Vessel Traffic Services Zone).\textsuperscript{552} The objective of this VTS zone is to enhance maritime safety as well as safeguarding the unique and fragile Arctic marine environment.\textsuperscript{553} The scheme provides the Canadian authorities with detailed information on the movements of vessels within the Arctic waters enabling them to intervene in threatening situations or where there is suspicion of violations of applicable legislation. The NORDREG Zone includes the shipping safety zones, which are established under AWPPA.\textsuperscript{554} The scheme resembles the reporting obligations of vessels in the waters of Svalbard but it includes a wider geographical area and implies more extensive reporting obligations. It is applicable to vessels above 300 tons and all vessels carrying as cargo a pollutant or dangerous goods.\textsuperscript{555} Vessels navigating or planning to navigate in the NORDREG zone have comprehensive reporting obligations.\textsuperscript{556} Their obligations include the submission of a sailing plan report before entering the zone, a position report when entering the zone and daily thereafter and a final report before leaving the NORDREG. Vessels are thus required to obtain clearance before entering within the NORDREG Zone.\textsuperscript{557} Vessels are also to submit deviation reports when their positions significantly deviate from the sailing plan report. The Shipping Act provides for boarding, inspection and detention of vessels suspected of violating the VTS requirements.\textsuperscript{558} Their violations are considered offences and may involve fines as well as imprisonment.\textsuperscript{559} Challenged inter alia by the US\textsuperscript{560} in the Maritime Safety Committee of IMO Canada has argued that the recent amendments are consistent with LOS Convention Article 234.\textsuperscript{561}

Port State Control

Canada is a member of both the Paris MoU\textsuperscript{562} and Tokyo MoU\textsuperscript{563} on Port State Control. Under these MOUs Canada is charged with controlling that vessels calling at its ports comply with applicable international conventions adopted through ILO and IMO. The Canadian authorities are provided in the Shipping Act with authority to detain vessels, expel them from and to refuse foreign vessels access to port when there are reasonable grounds for believing that they are not complying with the applicable international conventions.\textsuperscript{564} These measures are not available for the national rules and standards established under AWPPA. However, the AWPPA itself provides for the refusal of vessels to Canadian waters and for legal proceedings for vessels in violations of these rules and standards.

\textsuperscript{549} Navigation Safety Regulations, supra note 261, sections 66-68.
\textsuperscript{550} Navigation Safety Regulations, supra note 261, Section 5.
\textsuperscript{551} The Navigation Safety Regulations have their legal basis in AWPPA Section 12(1) (a) (ii). Under Section 15 (4) (a) of AWPPA a pollution prevention officer is competent under regulations adopted under its Section 12 applicable to the shipping safety control zones. AWPPA section 19(2) (a) makes it an offence for a vessel to navigate within such zones not complying with standards adopted under its section 12.
\textsuperscript{553} Canadian Coast Guard on Vessel Traffic Reporting Arctic Canada Traffic Zone (NORDREG), available at www.ccg-gcc.ca/e0001440.
\textsuperscript{554} Northern Canada Vessel Traffic Services Zone Regulations, Section 2(a).
\textsuperscript{555} Northern Canada Vessel Traffic Services Zone Regulations, Section 3.
\textsuperscript{556} Northern Canada Vessel Traffic Services Zone Regulations, Section 4 as prescribed in Sections 6-10. In section 5 the details of the report is prescribed.
\textsuperscript{557} Canadian Shipping Act, Sec.126 (1) and (3).
\textsuperscript{558} Canadian Shipping Act, Section 135(2), Section 138(4) and Section 177.
\textsuperscript{559} Canadian Shipping Act, supra note 270, Section 138(1) and (2).
\textsuperscript{562} Paris Memorandum of Understanding on Port State Control, available at http://parismou.org/.
\textsuperscript{563} Memorandum of Understanding on Port State Control in the Asia Pacific Region, available at www.tokyo-mou.org .
\textsuperscript{564} Canada Shipping Act, Section 227.
6.4 Assessment

The most relevant trans- and intra-Arctic shipping routes may be found in waters subjected to Russian or Canadian sovereignty or jurisdiction. Although the legal status of these waters is disputed, these two Arctic coastal States have come furthest in regulating international shipping. The status of the maritime areas is important for the scope of the jurisdiction of the coastal State as well as of the flag state therein. Whereas the coastal State enjoys exclusive jurisdiction in internal waters its legislative as well as enforcement jurisdiction is limited in international straits and even more so in the Exclusive Economic Zone. Still, the legislation of both coastal States seems to be based on Article 234 of the LOS Convention providing the coastal State with more extensive jurisdiction than normally within the limits of the EEZ. Article 234 may make the discussions on the legal status superfluous. The coastal States have exercised their extended jurisdiction somewhat differently but both have established stricter CDEM rules and standards, stricter operational discharges regulations and other types regulation of navigation than are available to the coastal State under normal circumstances. None of them has yet regulated the carriage of heavy grade oil as cargo or fuel.

There are also some controversies over the applicability of Article 234. The transformation of the Polar Shipping Guidelines, predominantly CDEM rules and standards into legal binding obligations under IMO conventions may provide more legitimacy to coastal State regulations in their EEZs as well as territorial seas. The same will be the case if Arctic maritime areas are granted status as special areas under MARPOL annexes restricting operational discharges and emissions from vessels. These international norms will reflect recognition of the necessity of special regulations in Arctic shipping. The question raised on whether Article 234 is applicable within the territorial sea will be of less importance where the coastal States establish national regulations consistently with these legal norms, which would be applicable to the majority of flag states. It will provide for a more general and predictable legal regime for Arctic shipping. The involvement of the coastal States in the implementation of the norms under Article 234 however provides for more flexibility as the regulations may be needed to be adapted to local conditions.

The involvement of IMO in regulation of Arctic shipping will be of importance where the retreat of the sea ice may raise doubts about the future applicability of Article 234. IMO may through its codification process contribute to a reinterpretation of the concept of ice covered areas and thus Article 234. With increased shipping activities, the presence of ice may pose other types of risks. This is recognised in the Polar Shipping Guidelines defining 'ice covered areas' as «...local ice conditions present a structural risk to a ship». Both the coastal and port States will be important to ensure that vessels navigating through Arctic waters are adequately constructed, designed and equipped. Article 234 of the LOS Convention provides the coastal State with a particular important role as vessels may bypass the port State control. Effective port State control presupposes information about the sailing routes of these vessels, which may not be available.

Vessels navigating to/from Arctic waters may transit the territorial sea or the EEZ of mainland Norway. However, it is doubtful whether Article 234 provides legal basis for extended Norwegian jurisdiction in these waters, as they are not ice covered in any sense of the concept. Norway will have to base its jurisdiction on the ordinary measures under the LOS Convention; applying to IMO for special measures. The exception may be in the northern parts of the Norwegian EEZ and a future EEZ established on the basis of Svalbard.

565 Polar Shipping Guidelines, G-3.5.
7. Summing up: Unilateral measures versus multilateral cooperation

7.1 Summary

In the introduction, the question was raised on the legal opportunities Norway has as a coastal state and a port state to promote safety and environmental protection in (international) Arctic marine shipping. The evaluation was to include both the measures Norway may take unilaterally and the measures that must be based in multilateral instruments.

Chapter 2 includes an overview of the jurisdictional framework Norway has to operate within in its coastal waters, particularly focusing on the extended jurisdiction in ice-covered areas and the waters of Svalbard. Regarding Svalbard, it is established that Norway is competent to establish a full 200 nautical miles Exclusive Economic Zone providing jurisdiction over international shipping consistent with the law of the sea. Even if provisions of the Svalbard Treaty on non-discrimination were applicable to the 200 nautical miles zone, it would have minor consequences for exercise of jurisdiction in the zone. The coastal state has similar obligations under the LOS Convention (e.g. Article 227).

Chapter 3 introduces the international legal and political framework of Arctic Shipping. The presentation underscores that international shipping already is subjected to comprehensive multilateral regulation through IMO and ILO Conventions, such as MARPOL 73/78 and SOLAS 74. IMO has adopted regulations on CDEM (on ice classed vessels, adaptation icing and lack of infrastructure) particularly adapted to shipping in Arctic waters, which are not legally binding. The second half of the chapter concerns other bodies relevant for Arctic shipping such as classification societies. They may arguably be influential in supplementing CDEM requirements for the Arctic waters through the increased use of goal-based requirements in SOLAS 74. The International Association of Classification Societies (IASC) has adopted unified requirements on Polar Class. The port state control schemes of Europe (Paris MoU) and Pacific (Tokyo MoU) is applicable to vessels navigating in Arctic waters and may be useful in controlling whether vessels are adequately constructed, designed, equipped and manned for navigating in Arctic waters. However, these schemes are applying legally binding requirements adopted through IMO and ILO. The cooperation between Arctic states particularly through the Arctic Council may prove important to develop such requirements. The 2009 Arctic Marine Shipping Assessment with its recommendations has proved important in the assessment of existing regulations/instruments and the development of new. The Arctic Council is implementing its recommendations, including the transfer of recommended CDEM rules and standards into binding through IMO, adoption of a regional SAR agreement and identification of vulnerable areas to be protected as special areas under MARPOL 73/78. The European Union may influence Norwegian position through its maritime transport legislation.

Chapter 4 on Norway as port State is introduced by a discussion on the legal basis of port state jurisdiction. The jurisdiction based on the sovereignty over the land territory is to a limited degree restricted by IMO Conventions and the LOS Convention. As the jurisdiction is based on the territorial principle, it limits the right to regulate activities in areas beyond national jurisdiction. It may be done where the port state has specific legal basis such as LOS Convention Article 218 where the vessel have been involved in illegal discharges in areas of the high seas or under jurisdiction of other coastal states. The alternative is to refuse vessels access to Norwegian ports. The port state has more extensive jurisdiction to establish national requirements on CDEM rules and standards for foreign vessels. However, such regulations may be more problematic under international law where the requirements in questions are not relevant for the vessels while navigating through Norwegian waters. The safeguards of section 7 of part XII of LOS Convention is applicable when Norway is exercising port state jurisdiction.

Chapter 5 on Norway as coastal State examines the jurisdiction of the coastal State to adopt and enforce operational regulations, measures for the protection of the marine environment and hereby area-based management measures. What measures the coastal State may or shall take for preventing or remedying environmental harm in case of an accident is also investigated. The coastal State has broad prescriptive jurisdiction, with the exception of CDEM standards, to adopt national regulations to ensure maritime safety and protection of the marine environment in the territorial sea. In the EEZ, this competence is much more limited as the coastal State may only adopt regulations that comply with GAIRAS. With regard to the enforcement jurisdiction, the coastal State has limited possibilities to enforce violations of shipping regulations. This is particular the case in the EEZ.

Chapter 6 on Regulation of Arctic marine shipping by other coastal states provides an overview of the legislation of Canada and Russia on Arctic shipping. In the chapter the status of the Arctic waters of the two states are not discussed. Canada and Russia are the two coastal states that have most extensive legislation, implementing LOS Convention Article 234. The legislation includes requirements of vessels as well as of the crew and regulation of navigation (e.g. report of entry into and positions during navigation and use of icebreaker assistance). This state practice may provide legitimacy to other Arctic coastal States such as Norway considering regulating international shipping within their EEZ.
There is wide agreement that there is a need for adopting regulations for Arctic shipping adapted to the particular climatic and environmental conditions of the region. The analyses undertaken in this report suggest that there is widespread agreement among Arctic states (also Norway) that these should be developed through multilateral instruments of IMO. These may provide for adequate regulation of Arctic shipping. In order for them to be implemented both coastal States and port State involvement is required. The interplay between these multilateral instruments and the particular environmental jurisdiction of the coastal states in ice-covered areas are unclear. Norway has extensive jurisdiction over foreign vessels voluntarily in its port; particular concerning CDEM requirements going beyond the regional port control schemes. The extra-territorial effects of the measures may limit and affect their design. The goal-based standards of SOLAS 74 may provide adequate basis for the port state. In any case, the main challenge whether the port state measures are unilaterally or multilaterally based is the need for the port state to have information on vessels operating in or to/from the Arctic waters. Neither the port state control schemes nor IMO regulation provides the port state with comprehensive and reliable information on the previous or next port of call. In order for the port state control to be effective, such information should be made available.

The limited prescriptive jurisdiction Norway has as a coastal State to adopt national regulations it finds necessary in the EEZ, limits the possibility to protect certain, environmental sensitive areas from the impacts of shipping. The adoption of operational requirements that qualify as GAIRAS also often relies on the endorsement of IMO. Moreover, coastal States are under international environmental law such as CBD required to protect marine biodiversity using area-based protective measures such as MPAs were also shipping is regulated. To comply with these obligations, in particular if the MPAs extend into the EEZ, it is necessary to use the special legal mechanisms LOSC 211 (6), MARPOL Special Areas or PSSA. These legal instruments all require cooperation with and the endorsement of IMO.

To be able to unilateral adopt measures to protect the sensitive maritime areas around Svalbard against the impacts from Arctic shipping; Norway should adopt an EEZ outside Svalbard instead of the fisheries protection zone. This would provide Norway with the legal opportunities to adopt stricter CDEM rules or other navigational standards than those available as GAIRAS and in that way ensure safe shipping and environmental protection of this sensitive maritime area. The practice from Russia and Canada investigated in this report, illustrates how Article 234 may provide for a legal basis to restrict navigation or require specific CDEM standards to ensure that the vessel is capable to meet the particular conditions in the ice-covered areas.

Questions for further investigation
The report has identified several issues that should be subject of further analyses. The focus has been on the opportunities of Norway under international law. The next step is to investigate whether Norway employed its opportunities through national legislation. Some of the issues have been discussed relatively briefly and deserves more attention. It includes the relevance of the LOS Convention Article 234 and its relationship with IMO Conventions, how the port state control regime may be adapted to include Arctic shipping. The role of classification societies should be further looked into.
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