

European Commission

LEGAL ASPECTS OF ARCTIC SHIPPING

Framework Service Contract, No. FISH/2006/09 – LOT2

Summary Report

submitted to:

DG Maritime Affairs & Fisheries



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February 2010

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Project no: ZF0924_S03
Issue ref: 2
Date of issue: 23 February 2010
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1. Introduction

The preparation of the Study takes place against the dramatic impacts of climate change on the Arctic: reduced sea ice is very likely to open up Arctic navigation routes as well as to improve access to Arctic natural resources, in particular hydrocarbons.

Arctic navigation routes include the ‘Northwest Passage’ between the Atlantic and Pacific oceans along the northern coast of North America and the ‘Northern Sea Route’ (NSR) which includes all passages along the North coast of the Russian Federation (see Figure 1). As a result of the continued melting of Arctic sea ice a new ‘Central Arctic Ocean Route’ may soon become an option alone or in combination with elements of the Northwest Passage or the NSR.

At present most Arctic shipping is ‘intra-Arctic’, comprising summer operations in the Canadian Arctic and around Greenland and year round operations along parts of the NSR. There have been only a handful of trans-Arctic voyages in summer along the Northwest Passage and the NSR since 2000 mostly for science and tourism.

Nevertheless, as noted in the European Commission’s 2008 Arctic Communication¹, the melting sea ice is progressively opening opportunities for navigation through Arctic waters which could considerably shorten trips from Europe to the Pacific with ensuing environmental and economic benefits. The successful navigation of the NSR by two German-owned cargo vessels, the *MV Beluga Fraternity* and the *MV Beluga Foresight* in September 2009 has generated considerable interest in the use of this route for commercial shipping, not least because further passages are already planned for summer 2010.

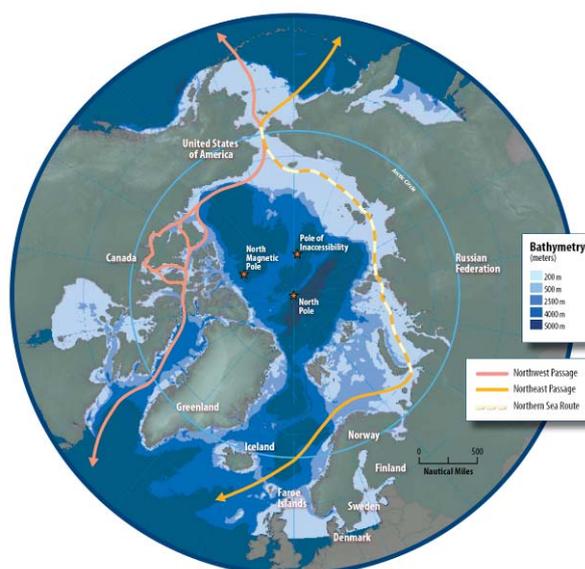


Figure 1 - The location of the North West Passage and NSR

Other potential drivers for increased Arctic shipping activity include the development of hydrocarbon extraction activities in Arctic waters and growth in Arctic cruise ship tourism.

For a range of reasons, therefore, including the fact that EU Member States collectively own the world’s largest merchant fleet, the EU has a number of significant interests in Arctic shipping. To that end the Arctic Communication notes the EU’s further interest in exploring and improving conditions for gradually introducing Arctic commercial navigation, while promoting stricter safety and environmental standards. It also calls on the Member States and the Community to defend their navigational rights.

¹ COM (2008) 763, of 20 November 2008, ‘Communication from the Commission to the European Parliament and the Council on *The European Union and the Arctic Region*’.

The main purpose of this Study is to examine the international legal regime that applies to the Arctic marine area in terms of shipping and related activities. The Study:

- provides an overview of the international law of the sea, its main features and maritime zones in the context of the Arctic marine area;
- discusses the international legal regime for the regulation of marine shipping;
- analyzes the national laws and regulations of the coastal Arctic States (Canada, Greenland (Denmark), Iceland, Norway, the Russian Federation and the United States of America); and
- draws conclusions and examines options for multilateral reform and consultation.

2. The Law of the Sea: main features and maritime zones in the context of the Arctic marine area

International law is the body of law that regulates the rights and duties of States and other actors, such as international organisations, recognised by international law. The law of the sea is the branch of international law that is concerned with all uses and resources of the sea. The sources of the law of the sea include customary international law as well as a range of conventions, treaties and agreements, the most important of which is the 1982 United Nations Convention on the Law of the Sea (LOS Convention).

All Arctic States are parties to the LOS Convention except for the United States, which nevertheless takes the view that, except for its Part XI, the LOS Convention is already part of customary international law. The European Union (EU) is also party to the LOS Convention. This is important in view of the fact that Denmark, Finland and Sweden are Member States of the EU and Iceland and Norway are parties to the Agreement creating the European Economic Area (EEA). The membership of Denmark, however, does not extend to Greenland which chose in the mid 1980s to withdraw from the then EEC and hence is not part of the EC/EU.

The overarching objective of the LOS Convention is to establish a universally accepted, just and equitable legal order - or 'Constitution' - for the oceans that lessens the risk of international conflict and enhances peace and stability in the international community. It seeks to reconcile a range of competing interests including the rights of coastal States, land-locked States and flag States as well as the interests of the international community as a whole in terms of such matters as navigation and the protection and preservation of the marine environment.

The legal framework of the LOS Convention is supplemented by a number of non-legally binding instruments such as codes of conduct as well as a range of international agreements of both global and regional application. The LOS Convention also accords 'competent international organizations' a key-role in its implementation and progressive development. As regards the international regulation of merchant shipping, this role is accorded to the International Maritime Organization (IMO).

The primary focus of the Study is on the tension between the rights and interests of coastal States and port States on the one hand and flag States on the other. While the term flag State is commonly defined as the State in which a vessel is registered and/or whose flag it flies, there are no generally accepted definitions for the terms coastal State or port State.

As none of the current EU Member States are coastal States with respect to the Arctic marine area, the EU cannot act in a capacity comparable to a coastal State to the Arctic marine area either. However, nothing stops the EU from acting in a capacity comparable to that of a flag State, a port State, a market State or with regard to the natural and legal persons of its Member States.

In addition, the EU and its Member States may also have various user interests (such as regarding the exploration and exploitation of offshore hydrocarbon resources) and non-user interests (such as the protection and preservation of the marine environment and safeguarding biodiversity) in the Arctic marine area.

A common distinction is made between a 'prescriptive jurisdiction', whereby a State prescribes (enacts) rules and standards, and an 'enforcement jurisdiction', whereby a State enforces the rules and standards it has prescribed.

Part of the balance aimed for by the LOS Convention is achieved through the division of the seas and oceans into maritime zones. The starting point for the measurement of the seaward extent of all the coastal State's maritime zones is the 'baseline'. The LOS Convention provides that a 'normal' baseline is the low-water line along the coast. In some circumstances, however, for instance where the coast "is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity" and across the mouths of rivers and bays, the LOS Convention allows coastal States to determine 'straight baselines'.

Controversially, Canada has drawn straight baselines around its Arctic islands - or Arctic archipelago - as illustrated in Figure 2 below. The international legal validity of enclosing the Canadian Arctic Archipelago with straight baselines remains contentious. The United States and EU Member States lodged formal protests against the baselines regarding them as inconsistent with international law. Whether Canada can justify the status of internal waters for the enclosed waters by the argument that they are historic waters, is in doubt.



Figure 2 Straight baselines claimed by Canada

Internal waters are waters landward of the baseline of the territorial sea (described in the next paragraph) and can include bays, estuaries and ports. A coastal State has full sovereignty over its internal waters and can, in most circumstances, restrict entry into them. This is where the significance of Canada's straight baselines arises. If Canada's arguments are correct, then large parts of the Northwest Passage would lie within Canada's internal waters.

As ports lie wholly within a coastal State's territory, customary international law and the LOS Convention also recognise a port State's wide discretion in exercising jurisdiction over its ports.

Pursuant to the LOS Convention, archipelagic States may draw straight baselines around their respective island groups thereby enclosing archipelagic waters. This notion does not extend

to islands situated off a mainland. Therefore neither Canada nor Norway qualify as archipelagic States. The practice by these two States is consistent with this view.

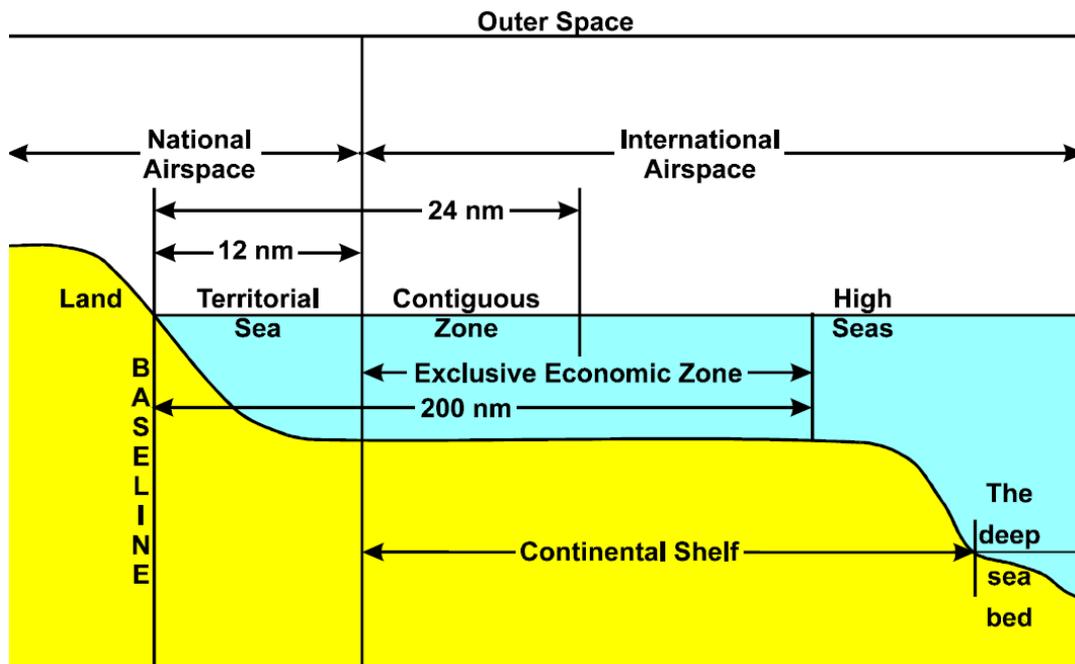


Figure 3 Maritime zones under the LOS Convention

Every coastal State has the right to a territorial sea up to a limit of 12 nautical miles (nm) from the baseline. A coastal State has sovereignty over its territorial sea, together with broad prescriptive and enforcement jurisdiction, subject to the right of ‘innocent passage’ by foreign vessels. Special rules apply to straits used for international navigation whereby the prescriptive and enforcement jurisdiction of coastal States are considerably curtailed. In terms of the Arctic, Canada and the Russian Federation take the view that this regime does not apply to the Northwest Passage and the NSR respectively due to a lack of actual usage. The United States takes the opposite view, one likely to be supported by other States with large fleets.

Beyond the territorial sea a coastal State may claim a contiguous zone that can extend to 24 nm from the baseline for customs, fiscal, immigration and sanitary enforcement purposes and an exclusive economic zone (EEZ) that can extend up to 200 nm from the baseline. Within its EEZ a coastal State has sovereign rights for the purposes of exploring, exploiting, conserving and managing living and non-living natural resources (*e.g.* fish and hydrocarbons) and other activities for the economic exploitation and exploration of the zone (such as the production of energy from the water, currents and winds) as well as jurisdiction with regard to artificial islands, installations and structures, marine scientific research and the protection and preservation of the marine environment.

A coastal State has a continental shelf comprising the soil and sub-soil of the submarine areas that extends beyond its territorial sea to the outer end of the continental shelf or up to 200 nm from the baseline if the continental shelf does not extend that far. In other words, some States may be entitled to an outer continental shelf that extends beyond 200 nm. A coastal State has sovereign rights for the purpose of exploring its continental shelf and exploiting its natural resources (such as the harvesting of sedentary fish species, drilling, tunnelling *etc.*).

No State may claim sovereignty over the high seas, the international commons beyond the EEZ, and consequently no State can exercise jurisdiction in a coastal State capacity there. All States enjoy the freedom of the high seas. Beneath the high seas and seaward of the coastal States' continental shelves, the seabed and ocean floor is categorized as the Area in the LOS Convention.

Finally in the context of maritime zones in the Arctic it is necessary to mention the particular regime created by the 1920 Treaty of Spitsbergen whereby Norway's territorial sovereignty over the Spitsbergen (Svalbard) Archipelago was recognised subject to the equal rights of fishing and hunting of the other Parties as well as equal liberty of access to waters, fjords and ports. Norway's right to take non-discriminatory conservation measures regarding flora and fauna in its 'territorial waters' was also recognised. Following the entry into force of the LOS Convention many years later, the question arose as to whether or not Norway would be entitled to the usual sovereign rights and jurisdiction seaward of the territorial sea and, if so, whether or not the regime of the Treaty of Spitsbergen would apply. So far, however, Norway has not designated an EEZ off Svalbard and also has not otherwise claimed jurisdiction over vessel-source pollution with regard to foreign vessels seaward of Svalbard's territorial sea.

3. The international legal regime for the regulation of maritime shipping

The international regulation of maritime shipping is primarily undertaken by global bodies and instruments of global application. This is a direct consequence of the global nature of international shipping and the interest of the international community in globally uniform international regulation. The LOS Convention safeguards the latter interest by only allowing unilateral coastal State prescription in a few situations. The regional bodies or groupings of States that nevertheless exercise prescriptive or enforcement jurisdiction over vessel-source pollution commonly do this in their capacities as flag States or port States.

Like the LOS Convention, the international legal regime for the regulation of maritime shipping also balances the different interests of the international community as a whole with the interests of States that have rights, obligations or jurisdiction in their capacities as flag, coastal or port States or with respect to their natural and legal persons.

Box A – Conventions adopted under the auspices of IMO

- Convention on the International Regulations for Preventing Collisions at Sea, London, 20 October 1972 (COLREG 72)
- International Convention for the Prevention of Pollution from Ships, London, 2 November 1973, as amended (MARPOL 73/78)
- International Convention for the Safety of Life at Sea, London, 1 November 1974, as amended (SOLAS 74)
- International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, London, 1 December 1978 as amended (SCTW 78)
- International Convention on the Control of Harmful Ant-fouling Systems on Ships, London, 5 October 2001 (Anti-Fouling Convention)
- International Convention for the Control and Management of Ships' Ballast Water and Sediments, London, 13 February 2004. Not in force (BWM Convention)
- International Convention on Oil Pollution Preparedness, Response and Co-operation, London, 30 November 1990 (OPRC 90) and the 2000 HNS Protocol
- International Convention on Civil Liability for Oil Pollution Damage, Brussels, 29 November 1969 (Civil Liability Convention)
- International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, Brussels, 18 December 1971 (Fund Convention)
- International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, London, 3 May 1996. Not in force (HNS Convention).
- International Convention on Civil Liability for Bunker Oil Pollution Damage, London, 23 March 2001 (Bunker Oil Convention)

In addition to the LOS Convention - which functions like a framework - the international legal regime for the regulation of maritime shipping consists of a range of instruments adopted within IMO and various regional organizations including the Arctic Council and the OSPAR Commission. These include a number of conventions adopted within IMO, as listed in Box A (above), as well as a number of relevant non-legally binding instruments, including the General Provisions on Ships' Routing, the Particularly Sensitive Sea Area (PSSA) Guidelines, the Arctic Shipping Guidelines and the IMO's Polar Shipping Guidelines.

Apart from the Arctic Shipping Guidelines and the Polar Shipping Guidelines, all these legally binding and non-legally binding instruments have a global scope of application and therefore apply in principle to the entire Arctic marine area.

At the regional level, the Arctic Council Members have committed themselves to implementing the Arctic Environmental Protection Strategy (AEPS) in conformity with LOS Convention. It can be assumed that this also includes respect for the mandate and work of the IMO. In 2000, the Arctic Council adopted the Action Plan to Eliminate Pollution in the Arctic (ACAP) and determined that the ACAP would be a basis for developing and implementing actions under the Council's auspices with respect to pollution prevention and remediation. Of the Arctic Council bodies, the efforts of the Protection of the Arctic Maritime Environment (PAME) and the Emergency, Prevention, Preparedness and Response (EPPR) working groups are the most relevant to this Study.

In addition to PAME's efforts in monitoring the IMO Arctic Shipping Guidelines, mention can be made of the Arctic Marine Strategic Plan (AMSP) and the Guidelines for Transfer of Refined Oil and Oil Products in Arctic Waters (TROOPS). The most recent relevant output of PAME is the Arctic Marine Shipping Assessment (AMSA), which was released at the Arctic Council Ministerial Meeting in Tromsø, April 2009. The AMSA contains a considerable number of Recommendations categorized under the headings 'Enhancing Arctic Marine Safety', 'Protecting Arctic People and the Environment' and 'Building the Arctic Marine Infrastructure'. The Senior Arctic Officials meeting in Tromsø, April 2009, recommended the Ministerial Meeting later that month to approve the AMSA. This was done by means of the Tromsø Declaration of 29 April 2009.

Mention can also be made of the OSPAR Commission established pursuant to the regional OSPAR Convention. The Convention's spatial scope applies to the 'OSPAR Maritime Area', which roughly overlaps with the Atlantic sector of the Arctic marine area (but about half extends further south). In addition, as a range of other multilateral and bilateral instruments and commissions are also relevant.

In terms of substantive standards, the international regime for the regulation of maritime shipping contains a wide number of categories, including:

- discharge and emission standards, including standards relating to ballast water exchange;
- construction, design, equipment and manning (CDEM) standards, including fuel content specifications and ballast water treatment requirements;
- navigation standards, in the form of ships' routing measures, ship reporting systems (SRSS) and vessel traffic services (VTSs);
- contingency planning and preparedness standards; and
- liability, compensation and insurance standards.

For the purpose of the Study, separate attention was devoted to the following categories of standards:

- cruise tourism;
- security issues;
- bunkering and transport of non-living resources; and
- the protection and preservation of the marine environment.

In terms of vessel-source pollution, the jurisdictional framework laid down in the LOS Convention is predominantly aimed at flag States and coastal States. Article 236 provides that the provisions of the LOS Convention regarding the protection and preservation of the marine environment do not apply *inter alia* to warships and other vessels on government non-commercial service.

As a general rule, prescriptive jurisdiction by flag States and coastal States is linked by means of rules of reference to the notion of ‘generally accepted international rules and standards’ (GAIAS). These refer to the technical rules and standards laid down in instruments adopted by regulatory organizations, in particular IMO. It is likely that the rules and standards laid down in legally binding IMO instruments that have entered into force can at any rate be regarded as GAIAS.

The LOS Convention stipulates that flag State prescriptive jurisdiction over vessel-source pollution is mandatory and must have at least the same level as GAIAS. Flag States can therefore choose to require their vessels to comply with more stringent standards than GAIAS, for instance by implementing the IMO Arctic Shipping Guidelines in their legislation.

Conversely, coastal State prescriptive jurisdiction over vessel-source pollution is optional under the LOS Convention but, if exercised, cannot be more stringent than the level of GAIAS. This is the general rule even though it is subject to some exceptions (see below).

It should also be noted that this general rule only relates to pollution of the marine environment by vessels, the definition of which is not broad enough to include anchoring or discharges of ballast water. Therefore the abovementioned restriction on coastal State jurisdiction over vessel-source pollution does not apply in such cases.

As regards ports and internal waters, the LOS Convention and a number of IMO instruments explicitly confirm the port State’s residual prescriptive jurisdiction meaning that port States within or beyond the Arctic marine area can, for example, deny access to certain types of ships or impose conditions for entry into port that are more stringent than GAIAS, for instance by incorporating the IMO Arctic Shipping Guidelines into their legislation.

Furthermore, Article 218 of the LOS Convention also explicitly grants port States enforcement jurisdiction over illegal discharges that have occurred beyond their own maritime zones, namely the high seas and the maritime zones of other States. Apart from rights, port States also have relevant international obligations with respect to foreign vessels in their ports and internal waters. One such obligation is contained in Article 219 of the LOS Convention for ‘unseaworthy’ vessels. Moreover, regional arrangements on port State control contained in memorandum of understanding (MOU), such as the Paris MOU and the Tokyo MOU, contain non-legally binding commitments on inspection and follow-up.

A coastal State is entitled to prescribe more stringent (unilateral) standards for the territorial sea, provided they “shall not apply to the design, construction, manning or equipment of foreign ships unless they are giving effect to generally accepted international rules or standards”. The rationale of this provision is to safeguard the objective of uniformity in the regulation of international shipping, which would be undermined if States unilaterally prescribe standards that have extra-territorial effects. For instance, unilateral fuel requirements affect this objective for the reason that compliance seems to require substantial and costly adjustments to vessels. Such requirements should therefore be treated analogous with CDEM standards.

By implication, Article 21(2) allows the coastal State at any case to set more stringent discharge, emission and navigation standards. As regards navigation standards, this is confirmed by Article 22 of the LOS Convention. Coastal States also retain a large measure of at-sea enforcement jurisdiction within the territorial sea, subject only to the need for “clear grounds” that a violation of its laws and regulations has taken place.

As explained above, in comparison with the normal regime for the territorial sea, the regime of transit passage considerably constrains the legislative and enforcement jurisdiction of coastal States and considerably relaxes the modalities of passage for foreign vessels and the stringency of the standards that are to be complied with. Vessels in transit passage are subject to the limited prescriptive jurisdiction that coastal States can exercise individually pursuant to Article 42(1) or in cooperation with the IMO pursuant to, or along the lines of, Article 41.

With regard to the EEZ, coastal State prescriptive jurisdiction over vessel-source pollution is optional but, if exercised, cannot be more stringent than the level of GAIRAS. Coastal States are also not entitled to adopt laws and regulations that relate exclusively to maritime safety and security. As regards enforcement, the LOS Convention contains very specific and complex directions dependent on the quality of the evidence that a violation has taken place and the seriousness of the actual or potential damage of the violation. These directions thereby considerably constrain the coastal State’s enforcement jurisdiction.

However a major exception to this basic rule is contained in Section 8 of Part XII entitled ‘Ice-covered Areas’ of the LOS Convention which contains a single provision, Article 234. It provides:

Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, 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. Such laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence.

Article 234 was included in the LOS Convention as a result of in particular the efforts of Canada, which sought to ensure that its 1970 Arctic Waters Pollution Prevention Act and underlying regulations and orders would no longer be regarded as inconsistent with international law. Very controversial at the time, that act asserted jurisdiction out to 100 nm.

Article 234 gives coastal States broad prescriptive and enforcement jurisdiction in ice-covered areas, even though for a limited purpose and subject to several restrictions. One such

restriction follows from the words “for most of the year”. However, decreasing ice-coverage means that fewer States will be able to rely on Article 234 in fewer areas.

A number of questions on the precise scope of the powers conferred on coastal States by Article 234. What level of ice cover is required? Will even partial ice cover suffice if there is an exceptional hazard to navigation? What is the significance of the reference to the limits of the EEZ? Some commentators have argued that the same regime also applies within the territorial sea as otherwise a coastal State would enjoy more extensive rights in its EEZ than in its territorial sea. Or is the meaning of Article 234 that coastal States are given no greater powers than those applicable in the territorial sea? Or are coastal States granted broader powers, including the right to unilaterally adopt special ship construction, crewing and equipment requirements. May coastal States legitimately require the provision of financial security or regulate how foreign ships deposit wastes? And does the regime created by Article 234 apply to all types of vessel including warships and government vessels?

The LOS Convention gives no guidance as to whether the regime of transit passage trumps the regime of Article 234 or vice versa, but the views of Canada and the Russian Federation can be expected to be the opposite of the views of the United States, other relevant States and the EU.

Finally, more stringent standards can also be adopted for special areas within the EEZ subject to IMO approval.

As regards the Arctic marine area, it can be concluded that the international regime for the regulation of maritime shipping contains in terms of substantive standards or requirements:

- no special IMO discharge, emission or ballast water exchange standards;
- no comprehensive mandatory or voluntary IMO ships’ routeing system for the Arctic marine area in its entirety or a large part thereof; and
- no legally binding special CDEM standards, including fuel content and ballast water treatment standards.

The only IMO instruments that are specifically tailored to the Arctic are the non-legally binding Arctic Shipping Guidelines and the Polar Shipping Guidelines. Also worth mentioning are the International Association of Classification Societies (IACS) Unified Requirements concerning Polar Class, which complement the Arctic and Polar Shipping Guidelines and other relevant IMO instruments.

Existing regional agreements on monitoring, contingency planning and preparedness for pollution incidents do not cover the entire Arctic marine area and not all Arctic Ocean coastal States are party to them. A related gap is the absence of a regional agreement on search and rescue. In relation to compliance and enforcement, it can also be concluded that there is no regional approach by Arctic States or an alternative group of States specifically aimed at ensuring compliance with applicable international rules and standards and national laws and regulations. It is moreover uncertain to what extent the IMO Arctic Shipping Guidelines and the IACS Unified Requirements concerning Polar Class are complied with by states, ship-owners and operators, crew and IACS members.

4. Laws and regulations of the coastal Arctic States

Having considered the international legal regime for the regulation of maritime shipping and its application to the Arctic marine area, the Study next examines the national legislation of the coastal Arctic States namely Canada, Greenland (Denmark), Iceland, Norway, the Russian Federation and the United States of America. The Study describes the institutions involved in the regulation of Arctic marine shipping as well as the main items of legislation. Key findings in terms of the relationship between that legislation and the navigational rights accorded to foreign vessels are summarized in the following paragraphs.

4.1. Canada

Arctic marine transportation is a key element of Canada's Integrated Northern Strategy, supporting key priorities in economic and social development and environmental protection and sovereignty. The Canadian government has made various commitments to support its vision for the North and to enhance Canada's security and enforcement capability in the Arctic.

Canada's 1997 Oceans Act declares a territorial sea of 12 nm from the territorial sea baselines, a contiguous zone adjacent to the territorial sea out to 24 nm from the territorial sea baselines, an EEZ adjacent to the territorial sea and extending out to 200 nm from the territorial sea baselines, and a continental shelf of at least 200 nm or further in case of an extended continental margin.

Specifically acknowledging the navigational rights and freedoms of foreign vessels for each zone, the Oceans Act does include some provisions aimed at protecting those rights and freedoms in terms of Canada's enforcement jurisdiction. In terms of navigating in Canada's waters, including the Northwest Passage, however, foreign vessels - including ships flying the flag of EU Member States - face two possible legal hurdles.

First, there is Canada's use of straight baselines with the effect that large areas of the route would take place within Canada's internal waters. Second, on the basis of the Arctic Waters Pollution Prevention Act (AWPPA), which as described above was a key factor in the inclusion of Article 234 of the LOS Convention, Canada applies discharge standards, CDEM standards and navigation standards that are more stringent than GAIRAS. AWPPA and ASPP In that such regulations also apply to warships and other government vessels they arguably go beyond the scope of Article 234. The AWPPA has recently been amended and now applies throughout Canada's EEZ.

4.2. Greenland (Denmark)

Unlike the other countries that are the subject of the Study, Greenland is not a sovereign State. Rather, it is a self-governing unit within the Danish realm and the Danish Constitution also applies to Greenland. However, following the recent adoption of the Act on Greenland Self Government No. 473 of 21 June 2009 (the 'Self Government Act'), Greenland's relationship with Denmark is currently in something of a state of transition. Specifically, the Self Government Act provides that responsibility for a number of areas of central relevance to this Study, including 'radio based maritime emergency services and security services', 'shipwreck, wreckage and degradation of depth' (*sic*), 'security at sea', 'ship registration and maritime matters', 'charting', 'the buoyage, lighthouse and pilotage areas' and the 'marine environment' may be transferred to Greenland's Self Government along with elements of foreign policy.

A particular feature of much of the relevant Greenland legislation considered in this Study is that it is essentially Danish legislation that is specifically applied to Greenland by Royal Decree. Greenland has claimed a territorial sea that extends only up to three nm from the baselines and an EEZ that extends up to 200 nm from those baselines.

Greenlandic legislation essentially applies GAIRAS in terms of shipping. Two regulations address ice navigation within Greenland's territorial sea: one specifies a number of rules of navigation while the other requires the fitting and use of ice searchlights.

The possibility that Greenland might adopt a specific Act on Safety at Sea for Greenland was raised at the spring meeting of Greenland's parliament in 2009. No further information is, however, available as to the possible content of such a law.

4.3. Iceland

In 2007 the Icelandic Minister for Foreign Affairs declared in his annual speech to the Icelandic Parliament that the Arctic was a new core element in Iceland's foreign policy. The 1979 Act Concerning the Territorial Sea, the Economic Zone and the Continental Shelf demarcates Iceland's maritime zones: all of the territorial sea baselines are drawn according to the straight baseline method.

Although Iceland has been defined by the Arctic Council as belonging entirely to the Arctic region, Iceland's maritime zones do not form part of Arctic Waters as defined in the IMO's Polar Shipping Guidelines.

The 2004 Act on Marine and Coastal Anti-Pollution, as amended, constitutes the principal item of legislation concerning marine pollution by ships. Applicable shipping standards do not go beyond GAIRAS and relevant EU standards. Iceland is party to the EEA agreement as well as IMO. Iceland has not sought to rely on Article 234 of the LOS Convention to implement special arrangements in ice-covered maritime waters.

4.4. Norway

A rationale for Norway's 2006 High North Strategy was the growing recognition of the importance of the area to Norway as a whole. The 'High North' includes the Northern part of Norway and the adjoining maritime areas northwards up to the Greenland Sea in the west including the island Jan Mayen and to the Barents Sea in the east including the Svalbard Archipelago. The High North Strategy also includes a reference to the integrated management plan adopted for the Barents Sea and the sea areas off the Lofoten Islands.

Norway's maritime zones are established on the basis of the Act on Territorial Waters and the Contiguous Zone and the Act on the Norwegian Economic Zone. While Norway has an EEZ off the coast of mainland Norway, around Jan Mayen island and Svalbard 200 nm 'fisheries zones' have been established. Consequently the principal item of maritime safety legislation, the 2007 Ship Safety and Security Act does not apply beyond the territorial waters of Jan Mayen and Svalbard (and there is currently no legal basis in Norwegian law for the implementation of Article 234 of the LOS Convention within the respective fisheries zones).

Norway has not adopted any specific Arctic maritime legislation relating to the High North. As a party of the EEA agreement, although Svalbard is not included, Norway applies EU maritime safety standards that do not go beyond GAIRAS.

4.5. Russian Federation

The Arctic has long been a specific item of Russian state policy. In terms of shipping the regulatory focus is on the NSR. Although opened to foreign shipping in 1991, volumes of cargo transported along the NSR have actually decreased fivefold since the 1980s.

Its name notwithstanding, the NSR is not a single linear 'route': due to the highly variable and difficult ice conditions the optimal course of vessels navigating the NSR will vary. Rather it constitutes the entire corridor that is the sea area to the north of the Russian Federation irrespective of the distance from the coastline including Russia's EEZ, territorial sea and internal waters.

Legislation on Russia's maritime zones is contained in the Federal Law on the Exclusive Economic Zone and the Federal Law on the Internal and Territorial Marine Waters, Territorial Sea and the Adjacent Zone, both of which date from 1998. The latter law also contains express references to the NSR and provides for the adoption of regulations by the Government concerning its use. Russia, like Canada, has made use of straight baselines which have the effect that Russia claims that parts of the NSR lie within its internal waters.

Navigation of the NSR is currently governed by a series of regulations adopted in the 1990s that, pursuant to Article 234 of the LOS Convention, introduce standards that go beyond GAIRAS for the entire length of the NSR. These include CDEM standards for vessels navigating the NSR, mandatory insurance requirements, navigation rules which include a formal authorisation procedure, the possible requirement to carry a state pilot aboard, and mandatory ice breaker pilotage at certain points which must be paid for in accordance with a published schedule of charges. In that such standards apply to all ships, including warships and government vessels, they too arguably exceed the scope of Article 234 of the LOS Convention.

A draft law on the NSR is currently being reviewed by the Russian Ministry of Transport which will formalise and strengthen the current regime.

4.6. United States of America

Alaska occupies the eastern side of the Bering Strait which must be used for any passage of the NSR or the North West Passage. On 9 January 2009, the White House released National Security Presidential Directive-66, Arctic Region Policy, which is the most succinct contemporary expression of U.S. national interests in the Arctic region

Although, as noted, the US is not party to the LOS Convention the coastal and navigation regimes that it foresees are recognised by the US and reflected in US Federal and State legislation. Due to the use of imprecise or inconsistent terms to describe US ocean areas, however, and the fact that the three nm territorial sea had been claimed since 1793 is still a feature of the US federalist system, a number of regulations that may apply to foreign-flagged vessels have an inconsistent or unclear extension of jurisdiction at sea, certain reforms notwithstanding.

Legislation on discharge and emission standards includes the Federal Clean Water Act, although Alaska has adopted additional rules concerning ballast water discharges in state waters. CDEM standards are specified in a number of instruments that give effect to US obligations under international law including MARPOL 73/78. While the US has statutes that

impose both criminal and civil penalties on foreign-flagged vessels for polluting U.S. waters these are required to be applied in a manner consistent with the LOS Convention.

Given the importance attached to the freedom of the navigation and the fact that the Arctic Ocean is treated no differently to any other ocean, the United States has not adopted specific legislation on Arctic Shipping that applies standards that go beyond GAIRAS.

5. Conclusions and options for multilateral reform and consultation

The legal regime for Arctic marine shipping comprises an intricate multi-layered framework. At the global level it consists of the jurisdictional framework laid down in the LOS Convention and the substantive standards and requirements incorporated primarily in IMO instruments. The predominance of global regulation is a direct consequence of the global nature of international shipping and the interest of the international community in globally uniform international regulation. While regional regulation is not ruled out, care must be taken not to undermine IMO's global primacy in the regulation of shipping for purposes that are within its mandate.

The jurisdictional framework of the LOS Convention sets out the basic rights and obligations of States in their respective capacities as coastal States, port States and flag States as well as the interests of the international community. Part of this jurisdictional balance is achieved through dividing the seas and oceans into maritime zones. In view of the preference for globally uniform international regulation of marine shipping, the LOS Convention allows coastal States to unilaterally - without the need for IMO involvement or approval - prescribe standards only in a few instances. One of these is Article 234 on 'Ice-covered areas'.

As regards the substantive standards and requirements that are primarily laid down in IMO instruments, this Study pursues a systematic analysis by distinguishing between the main types of standards, most importantly discharge and emission standards, CDEM, navigation standards, contingency, planning and preparedness standards and liability, compensation and insurance standards. The purpose for which such IMO standards have been adopted must fall within IMO's three-tiered mandate, namely maritime safety, environmental protection and maritime security. Some standards serve multiple purposes. In particular standards that have been primarily adopted for maritime safety can have significant environmental protection implications.

An analysis of the global component of the legal regime for Arctic marine shipping reveals that this framework is not sufficiently tailored to the special nature and risks of marine shipping in the Arctic. Most importantly, apart from Article 234 of the LOS Convention and the non-legally binding Arctic Shipping Guidelines and the Polar Shipping Guidelines, there is a lack of legally binding standards within the full range of substantive IMO standards, for instance CDEM, discharge, emission, ballast water exchange and navigation standards. There is currently broad support within IMO to address this situation by means of a mandatory Code on polar shipping, with a target completion of 2012.

There are a number of issues within the current international law of the sea, including the LOSC, on which States disagree. Many of these issues do not have specific spatial scope but apply nevertheless also to the Arctic marine area, for instance a strait State's enforcement powers.

Specifically with respect to the Arctic marine area, however, there are a range of disagreements on issues within the international law of the sea as well. For the purpose of this Study, a distinction can be made between those that relate expressly or directly to merchant shipping and those that do not. The latter issues include the following:

- (a) the dispute between Canada and Denmark on title to territory over Hans Island;
- (b) unresolved maritime boundaries between States;
- (c) absence of final and binding outer limits of the continental shelf beyond 200 nm involving the Commission on the Limits of the Continental Shelf (CLCS); and
- (d) disagreement on the spatial scope of application of the Treaty of Spitsbergen.

It is submitted that the first two issues may have implications for (the regulation of) merchant shipping but the latter two do not.

Disagreements that relate expressly or directly to merchant shipping include the following:

- (a) the consistency with international law of the straight baselines drawn by Canada around its Arctic archipelago and, as a corollary, the legal status of the landward waters and the navigational rights for foreign vessels therein, especially those that form part of the Northwest Passage;
- (b) the legal status of certain marine areas within the NSR;
- (c) the spatial scope of application of Article 234 of the LOS Convention; and
- (d) the relationship between the LOS Convention's Article 234 and its regime of transit passage for straits used for international navigation.

The disagreements listed in the previous paragraph converge in the Northwest Passage as well as the NSR. As regards the Northwest Passage, the United States and several EU Member States have protested the straight baselines and the United States also takes the view that the Northwest Passage - or at least part of its routes - is subject to the regime of transit passage and that this regime trumps Article 234. Apart from the issues of straight baselines, the United States has a similar view with respect to the NSR. If the Canadian and Russian views were to be upheld, they would be entitled to the in principle absolute coastal State authority States in internal waters or the extensive coastal State authority in territorial sea in addition to the far-reaching powers of coastal States pursuant to Article 234.

Based on the analysis of the national laws and regulations on merchant shipping of Canada, Denmark (Greenland), Iceland, Norway, the Russian Federation and the United States carried out in this Study, it can be concluded that only Canada and the Russian Federation have enacted laws and regulations that are significantly more stringent than GAIRAS.

Assuming that not the regime of transit passage but Article 234 would be applicable, the laws and regulations of Canada and the Russian Federation do not seem to overstep the limits imposed by Article 234. Both States formally recognise the various navigational rights of foreign vessels through their maritime zones. Moreover, the analysis did not indicate that the substantive standards or requirements are unreasonable or discriminate unjustifiably between national and foreign vessels.

The Canadian enactment that has most relevance for this Study is the AWPPA, the Act that 'inspired' Article 234 of the LOS Convention. With its scope recently extended to apply throughout Canada's EEZ, the AWPPA and its implementing regulations specify a number of

standards that are stricter than GAIRAS, including construction, design, equipment and navigation standards, including mandatory navigation and ice breaker service fees.

For the Russian Federation, the notion of the NSR as a national asset is well established and a specific body of legal rules has been developed for navigation through its Arctic waters. Also in reliance on Article 234 of the LOS Convention, these rules establish standards for the design, equipment and supply of vessels navigating the NSR, stipulate mandatory insurance requirements and impose navigation requirements that include a formal authorisation procedure, the possible requirement to carry a state pilot aboard and mandatory ice breaker pilotage. These laws and regulations also impose standards that are more stringent than GAIRAS. In other words, passage along the NSR is already tightly regulated and may become more so if the draft NSR law is adopted in the form outlined above.

As regards the scope of application of these laws and regulations of Canada and the Russian Federation, it is interesting to note that they do not appear to distinguish between the territorial sea and the EEZ. Arguably, therefore these States take the view that the far-reaching powers of coastal States pursuant to Article 234 can also be exercised in the territorial sea. It is not clear if other States have made formal protests on this particular point.

Even though the current laws and regulations of Canada and the Russian Federation thus appear consistent with Article 234 of the LOS Convention, except arguably in so far as they also apply to warships and other government vessels, and not unreasonable or unjustifiably discriminatory, it must be pointed out that a thorough analysis of the actual enforcement of these laws and regulations to all vessels - both domestic and foreign - may necessitate an adjustment of these conclusions. Moreover, as in particular technical secondary legislation can be rapidly adopted and modified, these conclusions need to be periodically re-evaluated. Finally, a question arises as to the scope of the AWPPA and NSR Rules: it may be appropriate for the international community/EU to maintain a watching brief over the actually extent of ice cover in the waters to which they apply.

While the analysis of relevant laws and regulations of Denmark (Greenland), Iceland, Norway and the United States has led to the conclusion that none of these States need to invoke Article 234 of the LOS Convention for justification, the question should also be raised if they would be entitled to rely on Article 234 in the first place. The phrase “for most of the year” would not give such an entitlement to Iceland at all but for Denmark (Greenland) it would be very broad. For Norway an entitlement would be limited to certain marine areas off Svalbard and for the United States to certain marine areas of the maritime zones off Alaska north of the Bering Strait.

In terms of considering options for consultation and reform, the main rationale for multilateral regulation of Arctic marine shipping is that it would provide a minimum level of regulation and a level playing-field between the participants. The more universal the participation in such multilateral regulation, the fewer free riders with competitive advantages there will be.

At the outset it is appropriate to address a number of more general considerations. These include: (a) whether options for reform should be legally binding or not; (b) whether there is a suitable existing international body where the selected option can be developed and adopted and if not, whether there is a need and sufficient support for establishing a new international

body; and (c) whether participation should be limited to Arctic coastal States and the related question as to which vessels should be subject to such regulation.

As regards existing bodies, some such as the Barents Euro-Arctic Council (BEAC), European Maritime Safety Agency (EMSA) and the OSPAR Commission appear to be less appropriate due to their restricted mandate, membership and/or spatial scope of application in terms of Arctic navigation.

On the other hand, while multilateral fora such as the IMO, the Arctic Council and the port State Control (PSC) Committees set up under the Paris and Tokyo MOUs are in principle suitable, their precise mandates and competences may not allow them to carry out all identified desirable options for reform. For example, the IMO, with its relatively technical mandate, is not a suitable forum for resolving such law of the sea controversies as the applicable legal regime for navigation in the Northwest Passage and the NSR.

Options for multilateral reform and cooperation on Arctic shipping discussed in the Study distinguish between options that can be pursued within IMO and options to be pursued outside IMO.

The options within IMO include legally binding and non-legally binding CDEM standards within a IMO Code on Polar Shipping, complemented by a wide range of other standards aimed at maritime safety and pollution prevention, for instance special discharge, emission, fuel content, ballast water exchange and navigation standards.

Outside IMO four types of options are suggested. First, a multifaceted strategy on port State jurisdiction, consisting of:

- (a) coordinated PSC, including for instance: advocating broader adherence to ‘relevant instruments’; action by the Maritime Authorities of Canada and the Russian Federation; amending the spatial scope of the Paris MOU; taking special account of ships that have engaged in Arctic shipping since their last port-visit and those that will do so before their next port-visit in the context of the Paris and Tokyo MOUs; or developing an Arctic Ocean/region MOU.
- (b) coordinated and optimized use of port State jurisdiction, for instance by making use of Article 218 of the LOS Convention and by exercising departure State jurisdiction; and
- (c) exercise of residual port State jurisdiction, where desirable.

Second, while taking due account of IMO’s mandate and ongoing efforts within IMO, complementary action could be desirable for the following issues:

- (a) contingency planning, preparedness and response for pollution incidents;
- (b) search and rescue;
- (c) places of refuge; and
- (d) compliance and enforcement, including coordinated aerial and satellite surveillance, at-sea inspection and enforcement and the harmonization of laws, regulations and policies relating to enforcement, including on penalties.

The third option is international consultations on Arctic navigation to address the diverging views of coastal and flag States on which of the law of the sea’s navigation regimes apply in the Northwest Passage and the NSR.

Finally, it may be desirable to pursue integrated approaches, either confined to the shipping sector or in the context of integrated, cross-sectoral ecosystem-based ocean management of the Arctic marine area.