



MARITIME SHIPPING

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Introduction

This background paper focuses on intra-Arctic and trans-Arctic marine shipping in the Arctic marine area. Trans-Arctic marine shipping can take place by means of various routes and combinations of routes. Two of these routes are the Northwest Passage and the Northern Sea Route. As a consequence of the accelerated melting of Arctic sea ice, however, the Central Arctic Ocean Route may soon be an option as well. The most suitable course of this latter route will probably vary greatly from year to year. These annual variations may lead to various combinations of the Central Arctic Ocean Route on the one hand and the Northwest Passage and Northern Sea Route on the other hand. It is finally important to note that all trans-Arctic marine shipping must pass through the Bering Strait.

Climate change and Arctic shipping

Current Arctic marine shipping is mainly intra-Arctic. Since 2000, there have only been a small number of trans-Arctic voyages in summer for science and tourism across the Northwest Passage and the Northern Sea Route. The main consequence of climate change for Arctic marine

shipping is contained in the Arctic Climate Impact Assessment (ACIA)'s Key Finding No. 6: "Reduced sea ice is very likely to increase marine transport and access to resources". Intra-Arctic and trans-Arctic shipping can be interesting alternatives for the much longer routes using the Panama and Suez canals or Arctic routes that are partly terrestrial and partly marine. Even though summers without sea-ice in much or all of the Arctic Ocean may only be a few decades ahead in the future, sea-ice is still expected to develop each year at the end of summer. However, as much or most of this will be relatively thin first-year ice, this may not be of too much hindrance to marine shipping.

The Arctic Marine Shipping Assessment (AMSA) that is currently carried out under the Arctic Council's Protection of the Arctic Marine Environment (PAME) working group, will provide projections of future Arctic marine shipping. This is facilitated by so-called 'scenarios'; plausible stories about the future. AMSA's Scenario Narratives of May 2008 are based on two variables (a) governance stability and (b) demand in resources and trade. These two variables lead to four scenarios referred to as (i) Arctic race, (ii) Arctic saga, (iii) Polar lows and (iv) Polar preserve. Each of these is potentially influenced by uncertainties or 'wildcards', for instance accelerated Arctic meltdown, major Arctic shipping disasters and technology breakthroughs.

At least in the near future, it seems that a high price for hydrocarbons will be an important driver, not only because of cost-benefits of shorter trans-Arctic shipping routes but also because the expected exploration and exploitation of hydrocarbon resources in the Arctic marine area will lead to increased shipping. Still, the risk-



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assessments of classification societies and the marine insurance industry are likely to be a crucial factor for the economic viability of all Arctic marine shipping. The future expansion of Arctic marine shipping is also likely to lead to more diverse stakeholders, which also do not necessarily have Arctic states as their main basis. Trans-Arctic marine shipping is expected to be an important driver for this development.

Impacts on the marine environment and marine biodiversity

The actual and potential impacts of shipping on the marine environment and marine biodiversity in the Arctic marine area is not fundamentally different from elsewhere in the world. They include, inter alia, shipping incidents, operational discharges and emissions, navigation impacts, introduction of alien organisms and anchoring impacts. However, the risk for some of these impacts, for instance shipping incidents, may be higher in some parts of the Arctic marine area due to the presence of ice(bergs) and insufficient experience in navigating in ice-covered areas and the lack of accurate charts. Moreover, the remoteness of much of the Arctic marine area, the limited available maritime safety information (MSI) data and the challenges of navigating therein mean that, once shipping incidents do occur, a response will take relatively long and may even then be inadequate to address impacts to the marine environment and marine biodiversity.

International legal and policy framework

Introduction

This section of the Background paper provides an overview of the international legal and policy framework with respect to Arctic shipping. The purpose of regulating Arctic shipping follows from the core focus of Arctic TRANSFORM, namely the protection and preservation of the marine environment and marine biodiversity of the Arctic marine area. This means that the International Maritime Organization (IMO)'s mandate over maritime safety and security in international shipping is in principle beyond this paper's scope. However, IMO rules and standards that are

primarily aimed at ensuring maritime safety and security are still taken into account if they have a significant subsidiary purpose of pollution prevention.

Substantive standards or requirements

In view of the jurisdictional framework for vessel-source pollution laid down in the LOS Convention and the types of standards agreed to within IMO so far, the following categories of substantive standards or requirements can be distinguished:

- 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 (VTS);
- contingency planning and preparedness standards; and
- liability and insurance requirements.

Intergovernmental and other relevant global bodies

International regulation of vessel-source pollution is primarily done by global bodies and in particular by the International Maritime Organization (IMO). 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 United Nations Convention on the Law of the Sea (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.

The IMO bodies of most relevance to this background paper are the Marine Environment Protection Committee (MEPC), the Maritime Safety Committee (MSC) and the latter's Sub-Committee on Navigation (NAV) and its Sub-Committee on Design and Equipment (DE).

International instruments

The main international instruments of relevance to this background paper are:

- the LOS Convention;
- the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78);
- SOLAS 74;
- the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention); and
- the IMO Guidelines for Ships Operating in Arctic Ice-Covered Waters (IMO Arctic Shipping Guidelines).

The Arctic states have also adopted several relevant bilateral and regional instruments on monitoring, contingency planning and preparedness for pollution incidents.

Some separate attention is now given to the LOS Convention and the IMO Arctic Shipping Guidelines.

LOS Convention

Most of the LOS Convention's provisions on vessel-source pollution are laid down in its Part XII, entitled 'Protection and Preservation of the Marine Environment'. The jurisdictional framework relating to vessel-source pollution laid down in the LOS Convention is predominantly aimed at flag and coastal states. Apart from one explicit provision (Article 218), port state jurisdiction is only implicitly dealt with (see further below). As a general rule, prescriptive jurisdiction by flag and coastal states is linked by means of rules of reference to the notion of 'generally accepted international rules and standards' (GAIAS). These are 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.¹ Coastal state prescriptive

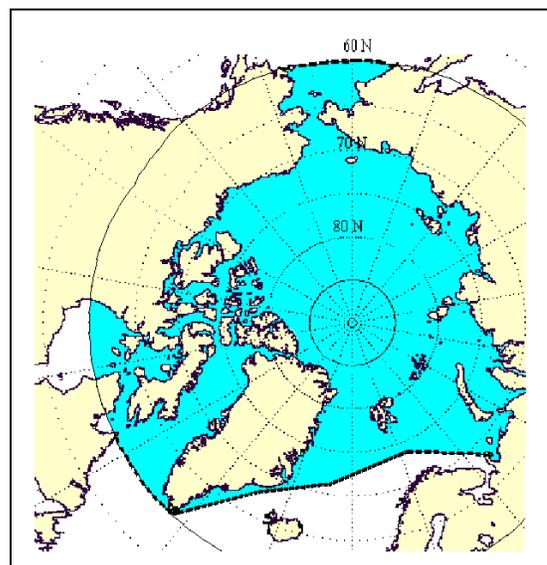
jurisdiction over vessel-source pollution is optional under the LOS Convention stipulates but, if exercised, cannot be more stringent than the level of GAIAS, subject to some exceptions.

IMO Arctic Shipping Guidelines

The relevant IMO instruments primarily have a global scope of application and therefore apply to the entire Arctic marine area. The only IMO instrument that is specifically tailored to the Arctic are the non-legally binding IMO Arctic Shipping Guidelines. As Figure 1 below shows, the Arctic marine area has a broader spatial scope than the maximum scope of application of the IMO Arctic Shipping Guidelines.

The Guidelines only contain CDEM standards but no discharge, emission, navigation or contingency standards, or liability or insurance requirements. However, several CDEM standards are explicitly aimed at the prevention or controlling vessel-source pollution. It is also noteworthy that the Guidelines only apply to international voyages and follow the definition of 'ship' used in SOLAS 74, which excludes for instance fishing and cargo vessels below a certain size or length and all naval vessels. Several provisions of the Guidelines contain linkages with the IACS Unified Requirements concerning Polar Class.

Figure 1: Maximum scope of application IMO Arctic Shipping Guidelines



(Source: IMO Arctic shipping Guidelines, Annex, p. 7)

¹ Cf. Art. 211(2) of the LOS Convention.

Gaps in the international legal and policy framework and national regulation and options for addressing them

Gaps

As regards substantive standards or requirements, the international legal framework contains:

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

The extent in which the absence of these standards or requirements pose a threat to the marine environment or biodiversity in the Arctic marine area cannot be assessed in this context.

As regards the regional agreements on monitoring, contingency planning and preparedness for pollution incidents, it should be noted that these do not cover the entire Arctic marine area and that not all Arctic Ocean coastal states are parties 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.

Options

The following are options for adjusting the current international legal framework relating to shipping in the Arctic marine area in case such adjustments are regarded as necessary in view of current or

future threats of shipping to the marine environment and marine biodiversity in the Arctic marine area.

Options for action within IMO:

- Make the IMO Arctic Shipping Guidelines mandatory, for instance by incorporating them into SOLAS 74;
- Pursue the adoption of special standards, for instance
 - Special discharge or emission standards for all or part of the Arctic marine area under MARPOL 73/78;
 - Special fuel content or ballast water treatment standards;
 - One or more mandatory ships' routing systems, whether or not in the form of a comprehensive 'Arctic Sea Lanes' proposal;
 - Ship reporting systems;
 - Compulsory pilotage and ice-breaker or tug assistance; and
 - Special anti-fouling standards.
- Designate (part of) the Arctic as a particularly sensitive sea area (PSSA), with a comprehensive package of associated protective measures (APMs) consisting of one or more of the special standards just mentioned above and other special standards such as special ballast water exchange standards.

Options for Arctic states at the regional level, in their capacities as coastal states:

- Agree on legally binding agreements on monitoring, contingency planning and preparedness for pollution incidents, as well as on search and rescue, including by designating places of refuge;
- Agree on a harmonized approach on enforcement and ensuring compliance, inter alia by means of shared platforms (e.g. 'shiprider agreements');
- Implement the BWM Convention individually or in concert; and
- Take other action under Article 234 of the LOS Convention, in particular if the IMO Arctic Shipping Guidelines are not made mandatory.

Options for Arctic states and other groupings of states at the regional level, in their capacities as port states:

- Develop a strategy for port state control in the Arctic, for instance by establishing an Arctic MOU on Port State Control or by adjusting the Paris and Tokyo MOUs on port state control to ensure that proper account is taken of intra-Arctic and trans-Arctic marine shipping;
- Implement Article 218 of the LOS Convention in concert; and
- Exercise port state residual jurisdiction in concert - relying in part on Article 234 of the LOS Convention - in case the IMO Arctic Shipping Guidelines are not made mandatory.

Other options for Arctic states, individually or collectively:

- Address the need for hydrographic surveying and charting;
- Encourage self-regulation by the shipping industry - for instance the cruise industry - by means of positive and negative incentives (e.g. positive discrimination and limiting landings and access to ports to cooperating players);
- Urge IACS to restrict the margin of discretion that individual members have in relation to the IACS Unified Requirements concerning Polar Class; and
- Require the marine insurance industry to promote compliance with IACS Unified Requirements concerning Polar Class, for instance by linking the level of compliance to the height of premiums

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ARCTIC TRANSFORM

Transatlantic Policy Options for Supporting Adaptations in the Marine Arctic

For additional information about the project, please refer to the project website:

<http://www.arctic-transform.org>

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² This policy brief is abridged from the full Arctic Transform background paper on Arctic fisheries.