

Identification of major legal issues relating to the operation of a pan-European research vessel in the Arctic



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Legal Advisory Panel meeting, 7 June 2011 (From left to right) Front row: Johannes Fuchs, Anastasiya Kozubovskaya-Pellé, Bonnie Wolff-Boenisch, Charlotte Breide, Barbara Weber Second row: Mariusz Mieczkowski, Julia Bobrova, Vladimir Second row: Mariusz Mieczkowski, Julia Bobrova, Vladimir Golitsyn, Friedrich Catoir Third row: Erik Franckx, Victor Tokushev, Tullio Scovazzi, Irini Papanicolopulu Fourth row: René J.M. Lefeber, Lester Lembke-Jene, Alfred H.A. Soons, Jacques Binot, Lidwien Van der Valk, Ian Sage



Research in the Arctic is a high priority for many scientists and decision makers worldwide. However, the equipment and infrastructures needed, such as heavy research icebreakers, are few, and operations in the central Arctic therefore remain restricted.

The concept of a European multipurpose research icebreaker AURORA BOREALIS has been developed to provide for the first time guaranteed access for many European countries to a state-of-the-art research infrastructure for the Arctic. This would support the goals of the European Research Area in the field of environmental and polar research, and lay the base for international cooperation in the Polar Regions.

Developed within the unique AURORA BOREALIS concept for a pan-European research vessel, this report, as well as other documents produced, serves as a blue print for legal aspects of pan-European research vessel projects, or endeavours leading towards a research fleet-type approach. In this second document of the ERICON AB Legal Advisory Panel (LAP), its members give practical recommendations for research vessels operating in the Arctic. The document is therefore of high interest for a wide range of players in the polar realm.

The LAP members, representing a broad cross section and with a variety of legal expertise, have joined forces to work on various topics related to the jurisdictional boundaries in the Arctic, navigation and scientific research in the Arctic waters, as well as on the liability regime of the sea-going vessels. The importance of the document is that recommendations are transposable and remain topical and relevant for European policy makers, independently of the fact that legal recommendations are case-by-case driven, and subject to legislative changes in the future.

This approach also allows the current ongoing work of ERICON AB project to be linked with upcoming projects and initiatives that have a similar need to overcome the handicap of limited access to the central Arctic.

In the name of the ERICON AB stakeholders and the management team I would like to thank the members of the LAP for their continuous interest and commitment to the project. My warmest thanks to the ERICON AB Legal Manager, Anastasiya Kozubovskaja-Pellé for her dedication and drive necessary to coordinate successfully the contributions of the LAP members, and to make this publication possible. A special thank you to Lidwien van der Valk from NWO, who has contributed to the edition of this document.

With best regards,

Joll

Dr Bonnie Wolff-Boenisch ERICON AB coordinator

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Frozen boat, Arctic © Thinkstock

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1. Definitions, Acronyms, Abbreviations

ABE-LOS -

Advisory Body of Experts on the Law of the Sea.

AWI –

Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany.

CSA – Canadian Space Agency.

CLC – International Convention on Civil Liability for Oil Pollution Damage.

EC – European Commission.

ECORD – European Consortium for Ocean Research Drilling.

EEZ(s) – Economic Exclusive Zone(s).

EPB – European Polar Board.

ERICON-AB – European Research Icebreaker Consortium – *RV Aurora Borealis.*

ESF – European Science Foundation.

EU – European Union.

GA – General Assembly.

IMO – International Maritime Organisation.

IOC – Intergovernmental Oceanographic Commission.

IPEV – Institut Polaire Français Paul Émile Victor.

LAP – Legal Advisory Panel.

MEPC – Marine Environment Protection Committee (IMO).

MSC – Maritime Safety Committee (IMO).

MSR –

Marine Scientific Research.

NATO –

North Atlantic Treaty Organisation.

NURC – NATO Undersea Research Center.

Project

(or *Aurora Borealis* **Project**) – *Aurora Borealis* research icebreaker project.

SAR – Search and Rescue.

UNCLOS – United Nations Convention on the Law of the Sea, 1982.

UNCTAD – United Nations Conference on Trade and Development.

UNEP – Unites Nations Environment Programme

UNESCO – United Nations Educational, Scientific and Cultural Organization.

2. Abstract

The present document is a second paper developed within the legal framework of the ERICON-AB Project, financed by the European Commission under the 7th Framework Programme. It reflects the discussions and the recommendations made in the course of the Legal Advisory Panel and developed in response to the interests formulated by the polar and marine scientific communities, represented by ERICON-AB partner institutions, by giving legal recommendations that would facilitate their activities in the Arctic. The document analyses some pertinent legal questions in this respect, and presents the general legal framework that would be applicable during the operation of a pan-European research vessel in the Arctic.

The first chapter draws a comprehensive "map" of different Arctic maritime boundaries and legal zones under sovereignty or jurisdiction of coastal States. The second chapter then addresses the legal framework applicable to navigation in Arctic waters, and discusses the impact of the international and coastal States' national regulations (focusing on Russian Federation and Canada legislations) on the operation of a pan-European research vessel.

The third chapter is devoted to one of the crucial issues for a polar pan-European research vessel - the legal framework applicable to marine scientific research in the Arctic.

The fourth chapter focuses on a number of complex issues related to the third party liability of sea-going vessels, insurance for the crew and scientific staff, and international liability of participating States. It also provides an overview of the international legal framework for the settlement of different claims that could occur in the course of operation of a pan-European research vessel.

The present document provides not only legal recommendations relevant to the operation of a pan-European research vessel in the Arctic, but also sets forth guidelines to be used by the research institutions as well as by the decision makers.



Legal Advisory Panel meeting, 23 August 2011 (From left to right) Front row: Tullio Scovazzi, Fiammetta Borgia, Anastasiya Kozubovskaya-Pellé, Charlotte Breide, Barbara Weber Second row: Julia Bobrova, Alfred H.A. Soons, Johannes Fuchs Third row: Lidwien Van der Valk, Irini Papanicolopulu, Vladimir Golitsyn

Fourth row: Erik Franckx, Friedrich Catoir

3. Introduction





Professor Tullio Scovazzi

Dr Anastasiya Kozubovskaya-Pellé

The concept of an international jointly operated research icebreaker¹ was motivated by rapid warming in the Polar Regions, together with their high importance for understanding global climate change. They have a great impact on people and ecosystems all over the world², yet scientific knowledge of the Arctic Ocean basin is poor.

The International Polar Year initiatives reflected not only the interest of the poles for scientists seeking to understand current changes, but also highlighted the increasing international awareness of those regions' importance.

The impact of climate change in the Arctic on the European countries explains the strong interest expressed in recent times³. Global change, transnational by nature, also touches non-Arctic rim countries. Therefore international cooperation and joint efforts are becoming increasingly relevant and important.

In its resolution of 20 January 2011 on a sustainable EU policy for the High North, European Parliament reaffirmed the legitimate interest of the EU in the Arctic "by virtue of their rights and obligations under international law, its commitment to environmental, climate and other policies and its funding, research activities and economic

For more information on the effects of warming in the Arctic see "Scientific Facts on Arctic Climate Change", <u>http://www.greenfacts.org/en/arctic-climate-change/index.htm</u>

3. "Developments in the Arctic are of even more strategic, economic and environmental interest for the European Union now than when the first Communication on the region was issued in 2008" in Communication "Catherine Ashton to visit northern Finland, Sweden and Norway to highlight importance of an enhanced EU policy towards the Arctic", Brussels, 5 March 2012 A 99/12. interests^{*4}. The European Commission recalls that "the European Union is inextricably linked to the Arctic region by a unique combination of history, geography, economy and scientific achievements"⁵. Three EU Member States – Denmark, Finland and Sweden – are Arctic region States; and a future potential accession of Iceland to the EU would further consolidate the EU's presence in the region⁶. "Through its Northern Member States and candidate countries the EU is affected by Arctic policies and likewise has an impact on Arctic policies"⁷.

At the conference "Climate change, international law, and Arctic research – legal aspects of marine research in the Arctic Ocean"⁸, held in Berlin in March 2011, the pan-European research vessel Aurora Borealis⁹ was welcomed by different politicians and scientists as an ambitious pan-European initiative, emblematic of the good cooperation between the Arctic partners, and important for tracing changes in the Arctic Ocean¹⁰.

In addition to being a strong symbol of successful cooperation between Arctic rim countries and countries not bordering the Arctic Ocean, such a pan-European vessel would also serve as an international platform for scientific collaboration advancing research in general. It would therefore bring benefit to all partners and to the international scientific community at large.

"Scientific data collected could be used to advise policy makers and encourage the implementation of safety regulations, thus limiting accidents and supporting sustainable activities. Ultimately, research icebreaker operations will help to preserve the Arctic"¹¹.

9. http://www.eri-aurora-borealis.eu/

^{1.} THIEDE J., EGERTON P., "Aurora Borealis: A Long-Term European Science Perspective for Deep Arctic Ocean Research 2006-2016", 2004, published on behalf of ESF for EPB and ECORD, Strasbourg, France. See also the web site of Aurora Borealis Project: <u>http://www.eri-aurora-borealis.eu/</u> 2. Arctic is especially vulnerable to the effects of global warming: the Polar Regions "react more rapidly and powerfully to changing conditions than any other region on Earth and are a major driver of climate change", WOLFF-BOENISCH B., LOCHTE K., GOLITSYN V., "Exploring the polar depths", International Innovation, Research Media Ltd, December 2011, pp. 23-25.

^{4. §§ 1, 2} and 6 of the European Parliament resolution of 20 January 2011 on a sustainable EU policy for the High North (2009/2214(INI)).

^{5. § 1} of the Communication from the Commission to the European Parliament and the Council - The European Union and the arctic region. COM/2008/0763 final.

^{6.} European Parliament resolution of 20 January 2011 on a sustainable EU policy for the High North (2009/2214(INI)). 7. §§ 1, 2 and 6 of the European Parliament resolution of 20 January 2011 on a sustainable EU policy for the High North (2009/2214(INI)).

^{8.} The conference hosted by German Federal Foreign Office, organized together with the Ministry for Foreign Affairs of Finland and supported by a great number of research institutes from Germany, Finland, Russian Federation, United States and Canada. For more details on the conference see <u>http://www.</u> <u>auswaertiges-amt.de/arktis/en/Startseite.html</u>

The conference materials entitled "Arctic Science, International Law and Climate Change: Legal Aspects of Marine Science in the Arctic Ocean" are to be published in 2012 under edition of TIROCH K., WASUM-RAINER S., WINKELMANN I.

^{10.} http://www.auswaertiges-amt.de/arktis/en/Speech_____ Damanaki.html

^{11.} WOLFF-BOENISCH B., LOCHTE K., GOLITSYN V., "Exploring the polar depths", International Innovation,

Research Media Ltd, December 2011, pp. 23-25.

3. Introduction



The initiative of a pan-European vessel responds to the wishes, concerns and ambitions expressed by the European Parliament in its resolution of 20 January 2011. In this resolution the Parliament requested the Commission "to examine the possibilities of developing circumpolar co-funding and co-programming initiatives to enable smoother and more effective cooperation between experts from the countries involved and [...] to promote cooperation activities with the USA, Canada, Norway, Iceland, Greenland and Russia in the field of multidisciplinary Arctic research, thereby establishing coordinated funding mechanisms". The Parliament also emphasised that, "in order to objectively determine the nature and rate of the changes occurring in the... Arctic, it is vital that international teams of scientists be given full access to carry out research in this particularly sensitive area...". It then pointed out that "the EU is stepping up its presence and involvement... by building joint infrastructure for research and increasing the number of research programmes carried out in the Arctic", supporting "in particular research teams made up of scientists from many different fields and representing all the countries involved"12.

A joint venture¹³, such as a pan-European research vessel, would avoid duplicated expenses through different countries each conducting their own expeditions in parallel in the same areas. The sharing of efforts and funds is crucial, particularly in the context of the current economic crisis, and "offers new scientific potential reaching beyond the capabilities of an individual nation"¹⁴. In this respect we can refer to the

existing successful examples of comparable international cost-sharing structures and science-effective cooperation: NATO research vessels *Alliance* and *Leonardo;* International Space Station Program; Ocean Facilities Exchange Group; Integrated Ocean Drilling Program¹⁵.

Multi-national ownership and operation of a pan-European research vessel naturally requires prior legal advice. The present document is a second paper developed within the legal framework of the ERICON-AB Project, financed by the European Commission under the 7th Framework Programme. While the first document provides recommendations on different ownership structures suitable for the multinational ownership of the vessel, and deals with such issues as ship immunity and ship registry of the vessel¹⁶, the present document covers different aspects related to the operation of the vessel in the Arctic. It reflects the discussions and the recommendations made in the course of the Legal Advisory Panel and developed in response to the enquires formulated by the scientific community (represented here by different research institutions - partners of ERICON-AB consortium) by giving legal recommendations that would facilitate the conduct of their activities in the Arctic. The document analyses some pertinent legal questions in this respect, and presents the general legal framework that would be applicable in course of operation of a pan-European research vessel in the Arctic.

Before introduction of the present report, we would like to briefly address the European registry/flag issue as we have been questioned about this several times during our work. It should be recalled that a pan-European research vessel could not fly a European flag as there is no European ship registry so far. Even though a European flag is represented on board as a symbol of joint European ownership and/or operation of the vessel, legally the vessel can only fly the national flag of the country she is registered in. The owners will have to choose a national ship registry, and the vessel will consequently fly the national flag of that country. This will attribute a nationality to the vessel, i.e. a legal regime that will apply to the vessel and to the persons on board. Therefore the choice of the flag is crucial. The ship registry issues for a pan-European research vessel have been discussed in more detail in the first document of the legal package "Recommendations and scenarios of legal implementation structures for the multi-purpose research icebreaker AURORA BOREALIS"17.

^{12. §§ 56-61} of the European Parliament resolution of 20 January 2011 on a sustainable EU policy for the High North (2009/2214(INI)). Emphasis added.

^{13.} In general and not legal meaning of this term.

^{14.} WOLFF-BOENISCH B., LOCHTE K., GOLITSYN V., "Exploring the polar depths", International Innovation, Research Media Ltd, December 2011, pp. 23-25.

^{15.} KOZUBOVSKAYA-PELLÉ A., "Recommendations and scenarios of legal implementation structures for the multipurpose research icebreaker AURORA BOREALIS", Deliverable 6.1 (document developed with support of Legal Advisory Panel and ERICON Management Team), p.16 and 17. 16. *Ibid.*

^{17.} KOZUBOVSKAYA-PELLÉ A., "Recommendations and

If the proposal of the EU ship registry, the EUROS, envisaged in 1989, has not been adopted (neither as fully-fledged EU registry, nor as voluntary parallel register)¹⁸, the assessment of the feasibility of the creation of an EU register and EU flag for maritime and inland waterways transport is again on the agenda: it is pointed out as one of the actions on transport safety in the EU White Paper on transport 2011: "assess the feasibility of the creation of an EU register and EU flag for maritime and inland waterway transport. In essence, the EU sign would represent a quality label certifying safe, secure, environmentally friendly ships manned by highly qualified professionals".¹⁹

The first chapter of this document draws a comprehensive "map" of different Arctic maritime boundaries and legal zones under sovereignty or jurisdiction of coastal States. It also includes recent developments in this area, and notably the delimitation treaty of 15 September 2010 in the Barents Sea and the Arctic Ocean between Norway and Russian Federation. This chapter also describes some of the important pending maritime delimitation cases in the Arctic: between Canada and Denmark (Greenland) in the Lincoln Sea, and between Canada and the United States in the Beaufort Sea. In conclusion the authors come up with some suggestions with regard to the operation of a pan-European research vessel in the disputed waters or seabed areas.

In the context of opening new northern routes, the navigation in Arctic waters becomes of major interest for the international community as a whole. Northern passages shorten considerably the usual sea trade lanes²⁰. Recently Russian tanker Vladimir Tikhonov has reached Dejnev cape (Bering Sea) from Novaya Zemlya (Kara Sea) in only seven and half days, saving therefore in total about seven navigation days for the whole journey to Thailand²¹. At the forum "Arctic – territory of dialogue" (Arkhangelsk, 22-24 September 2011) a large program for the development of the Northern Sea Route was presented, and the intention to transform it into an important

 19. White Paper "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system", COM(2011) 144 final, Brussels, 28.3.2011.
 20. BUDDER A., "Arctic for all?", <u>http://www.magazinegermany.com/</u> – ORTOLLAND D., "Atlas géopolitique des espaces maritimes, ressources énergétiques et minières, délimitations maritimes, pêches et environnement", 01-2008, chapitre XII "L'Océan Arctique", p. 182.

21. MELENNEC O., "Arctique Sovcomflot teste la route du Nord", Le Marin 16 septembre 2011, p.12.



Source: 'Arctic sea routes - Northern sea route and Northwest passage' – http://www.grida.no/graphicslib/detail/arctic-searoutes-northern-sea-route-and-northwest-passage_f951 © Hugo Ahlenius, UNEP/GRID-Arendal

commercial sea road was clearly affirmed.

In the light of these developments in the Arctic region, the legal regimes at international and national levels are set to change. The IMO is currently working on transformation of non-binding regulations – the 2009 Guidelines for ships operating in polar waters – into a binding legal framework, the Polar Code. The Agreement on Cooperation on Aeronautical and Maritime Search and Rescue (SAR) concluded on the 12 May 2011 represents the first legally binding instrument negotiated under the auspices of the Arctic Council²². As for national legislations, for example, the Russian Federation has already expressed its intention to adjust some internal rules regarding the development of the northern route – a bill on different navigation aspects is currently under discussion²³.

In the context of such changes, which also impact scientific cruises, the second chapter of this document addresses the legal framework applicable to the navigation in Arctic waters, and presents the impact of the international and coastal States' national regulations (focusing on Russian Federation and Canada legislations) on the operation of a pan-European research vessel.

scenarios of legal implementation structures for the multipurpose research icebreaker AURORA BOREALIS", Deliverable 6.1 (document developed with support of Legal Advisory Panel and ERICON Management Team), p.34.

^{18.} For more details see RINGBOM H., "The EU Maritime Safety Policy and International Law", Martinus Nijhoff Publishers, Leiden, Boston, 2008, p. 33 and 34.

^{22.} http://www.arctic-council.org/index.php/en/oceans/ search-and-rescue

^{23.} CORNIER J.-C., "Arctique Vladimir Poutine veut développer la route Nord", Le Marin 30 septembre 2011, p.5.

3. Introduction



Marine seismic in the Arctic being carried out by a ship capable of performing as an icebreaker © iStockphoto

The conference "Climate change, international law, and Arctic research – legal aspects of marine research in the Arctic Ocean" recalled the importance of scientific research in the Arctic, and acknowledged the necessity of dialogue between the policy makers and the scientists. It also highlighted the importance of the legal issues in this process.

At the meetings of the Legal Advisory Panel the experts discussed the most appropriate and suitable legal instrument for permissions to conduct research in the areas under jurisdiction of several Arctic coastal States. The LAP members notably exchanged views on possible application of the UNCLOS article 247 (procedures for dealing with research projects undertaken by international organizations).

In the introductive part of the Guide to the International Oceanographic Commission (IOC) (UNESCO) Procedure for the implementation of UNCLOS article 247, Patricio BERNAL (former Executive Secretary of the IOC) noticed that "the International Indian Ocean Expedition (IIOC, 1959-1965) and the World Ocean Circulation Experiment (WOCE) are typical examples where article 247 would have been extremely valuable to the international community and to IOC"²⁴. Taking into account certain similarity of these expeditions²⁵ to the current project of a pan-European vessel, the LAP discussed the pros and cons of the IOC Procedure for the implementation of UNCLOS article 247²⁶. It was agreed that, although article 247 UNCLOS in theory could be useful, this procedure appeared to be too cumbersome and not specifically suitable for the current situation²⁷.

In this respect it was suggested that the Arctic Council was likely to be the most appropriate forum for these purposes as it is a high-level intergovernmental assembly providing means for promoting cooperation, coordination and interaction on various Arctic related issues, and in particular on the issues of sustainable development

247 procedure.

27. Minutes of the 4th LAP, August 2011, p.14.

^{25.} The implementation of the World Ocean Circulation Experiment (WOCE 1994-1998) required the simultaneous operation of research vessels from different nations in the exclusive economic zone of several States. Each entry into such a zone had to be negotiated on a bilateral basis between the authorities of the flag country of the vessel and the coastal States.

^{26.} Special acknowledgment for providing the information on this procedure goes to Aurora MATEOS (legal consultant of the UNESCO IOC) and to Keith ALVERSON (Head of Ocean Observations and Services, Intergovernmental Oceanographic Commission of UNESCO).

^{24.} Introductive part of the Guide to the UNESCO IOC article

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and environmental protection in the Arctic²⁸. The Arctic Council "can be seen as a way to follow the objective of regional co-operation set forth by UNCLOS article 123. In fact, less structured forms of co-operation²⁹ can be as effective as other forms, depending on the political relations and goodwill of the States concerned"³⁰.

The recently adopted Nuuk Declaration (12 May 2011) opens new horizons for non-Arctic States and organizations³¹ with regard to the possibility of obtaining semi-permanent observer status in the Arctic Council. Since the EU and its Member States are one of the major contributors to Arctic-relevant research, the EU could obtain observer status in the Arctic Council³². Indeed, European countries are involved in a very active way in Arctic research³³. In its resolution of 20 January 2011 on a sustainable EU policy for the High North, the European Parliament reaffirmed that "the EU is committed to devising its policy responses in the Arctic on the basis of the best available scientific knowledge and understanding of the processes affecting the Arctic, and is accordingly already devoting sizeable research efforts to generating sound scientific evidence to support policy-making"³⁴.

The knowledge of the legal framework applicable to marine scientific research in the Arctic appears to be one of the crucial issues for a pan-European research vessel. This matter is addressed in the third chapter of this document, providing some recommendations in this respect.

The fourth chapter focuses on a number of complex issues related to the third party liability of sea-going vessels, insurance for the crew and scientific staff, and international liability of participating States. It also provides an overview of the international legal framework for the settlement of different claims that could occur in the course of operation of a pan-European research vessel. At the end of the chapter, the authors come up with several important recommendations enabling the participating States (or their research institutions) to manage their liability in case of damages caused by the vessel. The present document provides not only recommendations of legal and other matters relevant to the operation of a pan-European research vessel in the Arctic, but also sets forth guidelines to be used by the research institutions and by the decision makers.

^{28.} See the official web site of the Arctic Council <u>http://www.arctic-council.org/</u>

^{29.} The Arctic Council is not an international organization and therefore has no power to adopt mandatory measures.30. SCOVAZZI T., "Legal Issues Relating to Navigation Through

Arctic Waters", Yearbook of Polar Law, 2009, p.379. 31. The condition is to be involved in the scientific activities in

the Arctic.

^{32.} Certain policies relevant to the Arctic are exclusive European Union competences, such as the conservation and exploitation of marine biological resources under the common fisheries policy, and others partly shared with Member States. 33.<u>http://ec.europa.eu/maritimeaffairs/</u>

^{§ 58} of the resolution of the European Parliament of the 20 January 2011 on a sustainable EU policy for the High North (2009/2214(INI)).
34. § 4 of the Resolution of 20 January 2011 on a sustainable EU policy for the High North (2009/2214(INI)).

Chapter 1. Zones of National Jurisdiction³⁵



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Mr Mariusz Mieczkowski Dr Irini Papan



Dr Irini Papanicolopulu



Professor Tullio Scovazzi

Introduction

The legal regime of marine spaces is set out in the rules of international law of the sea, as codified in the United Nations Convention on the Law of the Sea (UNCLOS), adopted in Montego Bay in 1982 and entered into force in 1994. The UNCLOS has been ratified by 161 States and one international organisation (the European Community, now the European Union)³⁶. Most of the provisions of the UNCLOS apply not only to States that have ratified it, but also to all other States, as they reflect customary international law³⁷.

For legal purposes, the sea is divided into a number of zones, each of which is regulated by specific rules. The UNCLOS mentions the following maritime zones: internal waters, territorial sea, contiguous zone, exclusive economic zone, continental shelf, high seas, international seabed area ("Area", where the regime of common heritage of mankind applies). While the other zones may be called coastal zones, since the coastal State exercises sovereignty or sovereign rights and jurisdiction in them, the high seas and the Area are located beyond the limits of national jurisdiction.

Title to land territory automatically includes rights over appurtenant coastal zones, to the extent recognised by the applicable rules of international law. Coastal zones have an accessory character, in the sense that changes in entitlement to land sovereignty, which can be transferred from one state to another, entail ipso facto corresponding changes in rights over the adjacent

36. As of 19 September 2011.

coastal zones. The only presently unsettled question on sovereignty over territory in the Arctic region relates to the small Hans Island, claimed by Canada and by Denmark³⁸.

Maritime zones differ one from the other by reason of both their "horizontal" extension and their "vertical" extension. Vertically, the sea may be divided into three layers: the water column, the airspace and the seabed with the subsoil. Each maritime zone may include one or more sea layers.

Horizontally, maritime zones subject to the sovereignty or jurisdiction of the coastal State spread along a certain width, measured from a baseline. The baseline, also called the internal limit of the territorial sea, is the line from which the extent of the territorial sea is measured. All the maritime zones which are defined in terms of distance from the coast (territorial sea, contiguous zone, exclusive economic zone, etc.) are measured from the same baseline.

The present practice of the five Arctic coastal States is the following.

Section 1 Baselines from which maritime zones are measured

Among the five north polar coastal States³⁹, only the Unites States applies the normal baseline of the low water mark along the whole extent of its coastline, including that of Alaska.

a) On the basis of a Royal Decree of 12 July 1935, Norway established straight baselines along the northern part of the country (beyond the Polar Circle, 66° 28.8' north latitude). It was the first time in international practice that a State decided to draw into the

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^{35.} This Chapter is based, with updating's, on SCOVAZZI and PAPANICOLOPULU, "Report on the Political, Legal and Administrative Issues of Operating the Aurora Borealis in the Arctic and Antarctic Regions", Revised Version of 26 March 2010.

^{37.} The position of the United States, a country that has not yet ratified the UNCLOS, is that it reflects customary international law, with the exception of Part XI, relating to the seabed beyond the limits of national jurisdiction. See, inter alia, the statement on ocean policy made on 10 March 1983 by the President of the United States, in Roach & Smith, "United States Responses to Excessive Maritime Claims', 2nd ed., The Hague, 1996, p. 513.

^{38.} Less than a mile in length, it is located at 80°49' N, in the Nares Strait halfway between Ellesmere and Greenland.
39. See SCOVAZZI T., "The Baseline of the Territorial Sea: The Practice of Arctic States", in Oude Elferink & Rothwell (eds.), "The Law of the Sea and Polar Maritime Delimitation and Jurisdiction", London, 2001, p. 69.

sea a continuous series of segments, as the line from where the waters subject to national jurisdiction were measured. The decree mentioned in its preamble "the geographic conditions prevailing on the Norwegian coast" and the need to "safeguard the vital interest of the inhabitants of the northernmost parts of the country".

The baseline runs from Træna, in the county of Nordland, to the boundary with the neighbouring Arctic country (Finland in 1935, then the Soviet Union and now the Russian Federation) in the easternmost part of the fjord of Varanger. The 47 segments join 48 fixed points located on the mainland, islands or rocks, whose coordinates are specified in the schedule annexed to the decree. The longest segments are those closing Sværholthavet (39 n.m.), Lopphavet (43.6 n.m.) and Vestfjord (40 n.m.).

The 1935 Norwegian decree was the subject of a decision rendered by the International Court of Justice on 18 December 1951 in the Fisheries case (United Kingdom v. Norway). The Court decided that the method employed by the 1935 Norwegian Decree and the baselines determined by it were "not contrary to international law". To reach this conclusion, the Court relied on three different and concurring kinds of factors having a geographic, economic and historic character⁴⁰. The decision of the Court greatly influenced the provisions on straight baselines included in the subsequent conventions of codification, namely the convention on the territorial sea and the contiguous zone (Geneva, 1958) and the UNCLOS.

By a Royal Decree of 30 June 1955 Norway established straight baselines around the island of Jan Mayen. By a Royal Decree of 25 September 1970 straight baselines were also established around the islands of the Spitzbergen/Svalbard archipelago (islands of Hopen, Bjørn, Kong Karl, Kvit, Spitzbergen, Nordaustland, and Edge).

The Norwegian straight baselines along the whole mainland coast have been confirmed by the regulations laid down by the Royal Decree of 14 June 2002, as amended by Crown Prince Regent's Decree of 10 October 2003.

b) Straight baselines were established by Denmark for the southern (Executive Order No. 629 of 22 December 1976) and the northern part of Greenland (Executive Order No. 176 of 14 May 1980). The longest segments close Disko Bay (65.6 n.m.), Umanak Fjord (67.2 n.m.), Kane Basin (66.4 n.m.) on the western coast, and some indentations along the northern coast (67.2 n.m. and 80.1 n.m. for the line near Princess Dagmar Peninsula). The list of basepoints has been amended by the Royal Decree of 15 October 2004 which sets forth straight baselines also around Carey Island. Being characterised by many deep indentations similar to the Norwegian fjords, the coast of Greenland generally qualifies for the drawing of straight baselines. However, no detailed analysis has been published to determine whether the single segments comply with the applicable rules on straight baselines.

c) By the Territorial Sea Geographic Coordinates (Area 7) Order of 10 September 1985 Canada established a straight baselines system of 139 segments, which follow almost completely the Canadian Arctic archipelago from the boundary with the United States (Alaska) in the Beaufort Sea to the entrance of the Hudson Strait (between Labrador and Baffin island) in the Labrador Sea. Some of the longest segments close the Gulf of Amundsen (99.2 n.m.), the Strait of M'Clure (99.5 n.m.) and the Lancaster Sound (51.3 n.m.), that is the western and eastern entrances of the Parry Channel. Some basepoints on the northern coast of the island of Ellesmere are located on the outer edge of ice shelves.

The basis for a historic title is recalled in the preamble of the order: "whereas Canada has long maintained and exercised sovereignty over the waters of the Canadian Arctic archipelago". The United States took the position that the Canadian order had no legal basis. The United States added that the Canadian measures affected navigational rights through waters constituting straits used for international navigation and subject to the transit passage regime⁴¹.

On 11 January 1988 Canada and the United States signed an Agreement on Arctic cooperation. The parties affirmed that "navigation and resource development in the Arctic must not adversely affect the unique environment of the region and the wellbeing of its inhabitants" (Art. 2) and undertook "to facilitate navigation by their icebreakers in their respective Arctic waters and to develop cooperative procedures for this purpose" (Art. 3). As regards the 1985 Canadian claim, the United States "pledges that all navigation by US icebreakers within waters claimed by Canada to be internal will be undertaken with the consent of the Government of Canada" (Art. 3). However, this undertaking is accompanied by a disclaimer clause, so as not to prejudice the legal positions of the parties.

Also the member States of the European Community jointly stated, in a note dated 9 July 1986, that the Canadian baselines did not conform with the geographical requirements and that they could not

^{40.} The Court did not accept the assumption by the United Kingdom that precise limits of length were to be established for the single segments of the straight baseline.

^{41.} See ROACH & SMITH, op. cit., p. 118.

recognise the validity of a historic title as justification for the baselines drawn in the order. In a note of reply of 7 August 1986, the Canadian Department of External Affairs stressed the peculiarities of the waters enclosed by the baselines and their physical unity with the surrounding land.

d) By a Decree of 15 January 1985 of the Council of Ministers the Soviet Union established straight baselines along the Arctic Ocean. This legislation, which is today applied by the Russian Federation, gives the coordinates of 391 basepoints along the continental coast, from the boundary with Norway to Cape Neshkan, in the Chukchi Sea. The lines follow most of the coastline along the seas of Barents, Kara, Laptev, East Siberia and Chukchi. The Decree also provides that the waters of the White Sea, south of the line connecting Cape Svyatoy and Cape Kanin, the waters of Cheshskaya Bay, south of the line connecting Cape Mikulkin and Cape Svyatoy (Timanskiy), and the waters of Baydaratskaya Bay, southeast of the line connecting Cape Yuribeysalya and Cape Belushiy, are internal waters, as waters historically belonging to the Soviet Union. The closing lines of the three historical bays measure respectively 70.4 n.m. (White Sea), 35.6 n.m. (Cheshskaya) and 54.2 n.m. (Baydaratskaya). Separate sets of basepoints are also located on single islands: Kolguev (2 points); three of the islands of the Zemlya Frantsa-losifa archipelago, namely Zemlya Alexandry (4 points), Zemlya Georga (14 points), Zemlya Gallya (4 points); one of the islands of the archipelago of Novaya Sibir (6 points); and Vrangelya (10 points).

Other islands, such as Novaya Zemlya, the archipelago of Severnaya Zemlya and most of the islands of the archipelago of Novaya Sibir, are joined to the continent by segments of the straight baselines. This has the effect of including within the Russian internal waters three sea areas which could be considered as international straits, namely the Kara Strait (connecting the Barents and Kara Seas), the Vil'kitskogo and Shokal'skogo Straits (connecting the Kara and Laptev Seas) and the Sannikov and Dimitri Laptev Straits (connecting the Laptev and East Siberian Seas).

All the above-mentioned straits are located along the Northern Sea Route, which is composed of a series of shipping routes, running north of the Russian coast, through the seas of Kara, Laptev, East Siberia and Chukchi and connecting the Atlantic and the Pacific Oceans. The position of the Soviet Union was that none of these straits was used for international navigation. The present position of the Russian Federation does not appear to have changed⁴². The

42. "It is important to note that in areas of the North certain parts of the territorial sea of Russia were transformed into

United States took an opposite view. It protested against the Soviet straight baselines system and in 1992 "challenged the Russian straight baseline closing access to the Barents Sea port of Murmansk"⁴³.

It should be recalled that, as provided for in Art. 5, para. 2 of the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone and in Art. 8, para. 2 of the UNCLOS, where the establishment of a system of straight baselines has the effect of enclosing as internal waters areas which had not previously been considered as such, a right of innocent passage shall exist in those waters.

Section 2 Territorial Sea, exclusive economic zone and continental shelf, including extended continental shelf

All five Arctic coastal States have enacted legislation which provides for the establishment of coastal zones according to the limits set forth in the UNCLOS, namely a 12-mile territorial sea and a 200-mile exclusive economic zone. The legislation of Norway (Act No. 91 of 1976 relating to the exclusive economic zone off the mainland coast), the United States (1983 Proclamation on the exclusive economic zone), Canada (1996 Oceans Act), the Russian Federation (1998 Federal Act on the exclusive economic zone), and Denmark (2004 Executive Order on the exclusive economic zone of Greenland) is to be recalled in this regard. In certain cases the legislation generally applies to all the national territory, including the Arctic region; in other cases special legislation has been enacted for the Arctic region. However, some peculiarities exist in the cases of Canada and Norway.

In 1970 Canada, by the Arctic Waters Pollution Prevention Act, adopted special measures for the regulation of navigation and the prevention of pollution from vessels within a 100-mile zone from the nearest Canadian land in Arctic waters between 60° lat north and 141° long

internal sea waters as a consequence of drawing straight baselines under the 1985 Decree of the USSR Council of Ministers. These actions did not entail preservation of the right of innocent passage since international shipping was not effectuated in waters off the Novaya Zemlya, Northern Zemlya, and Novosibirsk Islands, including the waters of a number of straits. Here the regime of internal sea waters is retained with the right of the coastal state, that is, the Russian Federation, to fully regulate navigation and the sojourn of foreign ships in these waters." (KOLODKIN, GUTSULIAK & BOBROVA, "The World Ocean: International Legal Regime", English translation, The Hague, 2010, p. 19).

43. ROACH & SMITH, "United States Responses to Excessive Maritime Claims", 2nd ed., The Hague, 1996.

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Tourists on board a zodiac explore a glacier off the coast of Spitsbergen in the Arctic © iStockphoto

west. At that time, Canada was concerned about the environmental risk of a project planned by United States companies to develop a route of navigation through the North West Passage and within the islands of the Canadian Arctic archipelago to be used by ice-strengthened supertankers carrying oil extracted in Alaska. The measures that have been adopted under the act can today be justified under Art. 234 UNCLOS, which applies to navigation in ice-covered areas and was proposed by Canada during the negotiations for the UNCLOS. The act was subseguently replaced by the Arctic Waters Pollution Prevention Act, 1985. A number of regulations and orders have been adopted on the basis of it. Lastly, in 2009 the act was amended to enforce national environmental legislation and shipping regulations in Arctic waters up to 200 n.m., doubling the area of coverage previously established.

By regulations adopted in 1977 Norway established a 200-mile fishery protection zone around the Spitzbergen/ Svalbard archipelago. However, the right of Norway to exercise exclusive rights over the living resources of such a zone, as well as over the mineral resources of the continental shelf around the archipelago⁴⁴, is questioned by several States parties to the 1920 Spitzbergen Treaty that granted to Norway the sovereignty over the archipelago. These States rely on Art. 3 of the treaty⁴⁵.

Conflicting views on maritime zones were so far at the heart of some fishery incidents around the Spitsbergen / Svalbard but have not affected marine scientific research. The Parties to the Treaty on Spitsbergen signed in Paris on 9 February 1920 recognized the sovereignty of Norway over this Arctic archipelago called in Norway Svalbard. The change from terra nullius to Norwegian sovereignty was subject to restrictions and conditions inter alia with respect to unhindered access and equal

^{44.} Including the continental shelf beyond 200 n.m. as it appears from the observations made by the Russian

Federation and Spain to the submission presented by Norway to the Commission on the Limits of the Continental Shelf. 45. "The nationals of all the High Contracting Parties shall have equal liberty of access and entry for any reason or object whatever to the waters, fjords and ports of the territories specified in Article 1; subject to the observance of local laws and regulations, they may carry on there without impediment all maritime, industrial, mining and commercial operations on a footing of absolute equality. They shall be admitted under the same conditions of equality to the exercise and practice of all maritime, industrial, mining or commercial enterprises both on land and in the territorial waters, and no monopoly shall be established on any account or for any enterprise whatever (...)".

treatment for other Parties as regards hunting and fishing in the islands of the archipelago and in their territorial waters (at the time 4 n.m. in the case of Norway).

The post war developments of the law of the sea (extension of territorial sea, institution the continental shelf and exclusive economic zone as coastal spaces adjacent to the territorial sea) raise the question how the 1920 text has to be interpreted with regard to present activities and economic prospects of the area. In this regard there are three major conflicting legal positions:

- Norway stresses its stand on the sovereignty recognized by Art.1 of the treaty and on the restrictive interpretation of the exceptions and conditions contained in the subsequent articles. It holds the view that it enjoys all coastal States rights under present law of the sea and that the treaty does not apply to the extended territorial waters, the proclaimed fishery zone, the continental shelf, and a possible future proclamation of an exclusive economic zone.
- Certain treaty parties and scholars hold the view that the developments in international law could not confer new rights to Norway beyond the territory specifically defined in the Spitsbergen Treaty. This means there is no Norwegian continental shelf or fishing or exclusive economic zone. They argue that the new rights of coastal States derive from the sovereign rights on the mainland and that the restrictions on the mainland ban any extension beyond a 4-mile territorial sea.
- Other treaty parties and scholars accept the applicability of all consequences of UNCLOS including 12-mile territorial sea, 200-mile exclusive economic zone and continental shelf, but argue that the Spitsbergen Treaty and in particular the access and equal treatment rules contained in Art. 2 and 3 are applicable to these areas and rights to the benefit of all parties⁴⁶.

If all the present and the potential claims to an outer continental shelf by the five Arctic coastal States are taken into consideration, a rather limited portion of Arctic seabed will remain in the legal condition of seabed beyond the limits of national jurisdiction, where the principle of common heritage of mankind could apply. On 20 December 2001 the Russian Federation was the first State to make a submission to the Commission on the Limits of the Continental Shelf. However, the Commission decided in 2002 that the information provided to it by the Russian Federation was insufficient and recommended that the Russian Federation made a revised submission to the Commission with regard to the Central Arctic Ocean.

On 27 November 2006 Norway presented to the Commission a submission for the establishment of the outer limits of its continental shelf beyond 200 n.m. in the Norwegian Sea, the Barents Sea and the Arctic Ocean. On 27 March 2009 the Commission made its recommendations on the submission. This allowed Norway to finalise the establishment of the outer limits of its continental shelf. The submission presented on 20 April 2009 by Denmark is limited to the area north of the Faroe Islands. Another submission, relating to Greenland, is probably under preparation. For Denmark, the 10-year deadline will expire in 2014. No submission has so far been presented by Canada. For it the deadline will expire in 2013. No submission can be presented by the United States as long as it does not become a party to the UNCLOS.

Section 3 Maritime boundaries between Arctic States

1. Agreed boundaries

For the time being the following treaties have been concluded to delimit national maritime zones in the Arctic.

In 1957 Norway and the Soviet Union delimited the territorial sea off their land boundary in the Varanger fjord. The delimitation line in the same area was extended by an agreement concluded in 2007.

In 1973 Canada and Denmark delimited the continental shelf through Davis Strait, Baffin Bay, Nares Strait and Robeson Channel for a distance of about 1,450 n.m., covering a great part of the maritime boundary between the two States⁴⁷.

In 1981 Iceland and Norway, following the recommendations made by a Conciliation Commission, delimited the continental shelf between Iceland and the island of Jan Mayen.

In 1995, on the basis of a judgment rendered in 1993 by the International Court of Justice, Denmark and Norway delimited the continental shelf and the superjacent waters between Greenland and Jan Mayen. The Court found that a delimitation by the median line would involve disregard of the geography of the coastal fronts of eastern Greenland and of Jan Mayen and that, in the light of the disparity of coastal lengths, the median line

^{46.} There is ample literature on this subject. See, inter alia, ULFSTEIN, "The Svalbard Treaty", Oslo 1996; ULFSTEIN and CHURCHILL, "The Disputed Maritime Zones Around Svalbard", in Norquist (ed.), Changes in the Arctic Environment and the Law of the Sea, Leiden, 2010, p. 551.

Special acknowledgement to Mr CATOIR F. for the contribution to this section.

^{47.} Interestingly there is no connection between points 122 and 123 in the Nares Strait, by reason of the dispute over Hans Island.

should be adjusted or shifted in such a way as to effect a delimitation closer to the coast of Jan Mayen.

In 1997 Denmark and Iceland agreed on their maritime boundary in the area between Greenland and Iceland. The boundary reaches the triple point Norway (Jan Mayen) – Denmark (Greenland) – Iceland.

In 1990 the Soviet Union and the United States defined their maritime boundary in the Bering and Chukchi Seas, following in the Arctic region the meridian 168° 58' 37" W. The agreement has not yet entered into force, because of the lack of ratification by the Russian Federation.

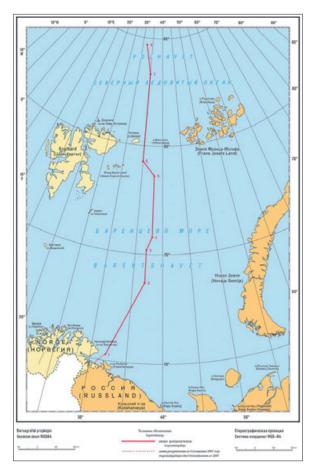
In 2006 Denmark and Norway delimited the continental shelf and the fisheries zones in the area between Greenland and Spitzbergen/Svalbard.

The most recent delimitation treaty in the Arctic is the Treaty on Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean signed on 15 September 2010 in Murmansk by Norway and the Russian Federation. It completes the process of delimitation between the two countries after the two already mentioned bilateral treaties of 1957 and 2007. Under Art. 1 of the 2010 treaty the maritime border divides the disputed area into two roughly equal parts. The treaty also sets forth the conditions for fishing cooperation, providing for the retention of the mechanism to jointly regulate fishing in the Barents Sea according to the measures decided by the Norwegian-Russian Joint Fisheries Commission. The treaty defines the principles of cooperation in hydrocarbons deposits exploration (Art. 5 and Annex II) and creates a favourable legal environment for oil and gas exploitation of the Arctic continental shelf through cooperation in hydrocarbon exploration and production in the former disputed area. The treaty will provide additional impetus to cooperation in the Arctic region⁴⁸.

2. Pending delimitations

There are still boundaries which have not been delimited between the Arctic States. Two important pending maritime delimitation cases are hereunder described, namely the cases of Canada and Denmark (Greenland) in the Lincoln Sea and of Canada and the United States in the Beaufort Sea.

The Lincoln Sea is bounded by the Canadian and Greenlandic coasts in the south and borders the Arctic Ocean in the north. At the time of the already mentioned 1973 Agreement, neither party deemed it



Treaty on Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean signed on 15 September 2010 in Murmansk by Norway and the Russian Federation. Source: <u>http://www.eu-norway. org/news1/Treaty-on-maritime-delimitation-and-cooperation-in-the-Barents-Sea-and-the-Arctic-Ocean-signed-today/</u>

necessary to draw the dividing line further north than point No. 127, which was established as the end point of a maritime boundary between Canada and Denmark running through Davis Strait, Baffin Bay, Nares Strait and Robeson Channel. The parties decided that the extension of the line would be drawn after more was known about the area in guestion and its resources. Both parties agreed on employing the equidistance principle in order to extend the boundary line into the Lincoln Sea. However, they could not agree on the establishment of the relevant base-points from which the equidistant line could be measured. There is disagreement on how much effect should be given to Beaumont Island, which is located off the Greenlandic coast, and on whether the straight baselines, which are drawn around the island, should be taken into consideration. If so, they would push the equidistance line towards the Canadian coast-

^{48.} TITUSHKIN, "About the Treaty between the Russian Federation and the Kingdom of Norway on Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean on September 15, 2010", in Yearbook of Maritime Law, 2010, p. 380 (in Russian).

line, creating two disputed areas of 31 and 34 square nautical miles.

The United States and Canada disagree on the location of the maritime boundary in the Beaufort Sea and northward. The Beaufort Sea is bounded by the Arctic Ocean on the north and Canadian and Alaskan coastlines on the south. In Canada's view, the boundary line should follow the 141st meridian, which forms the land boundary between Alaska and the Northwest Territories under a treaty concluded in 1825 by the two predecessor States of Great Britain (for Canada) and Russia (for Alaska). The United States argues that the maritime boundary should be drawn on the basis of an equidistance line⁴⁹. If the equidistance principle was applied, the current delimitation line would be pulled over towards the Canadian coast, due to the slightly convex coast of Alaska and the concave coast of Yukon. The disputed area, created by these different views, is approximately 6,250 square nautical miles. In 1968 fields of oil and gas were found at Prudhoe Bay near the disputed maritime boundary⁵⁰.

Conclusion

While disputes over land sovereignty are almost nonexistent in the Arctic region, several important questions relating to maritime claims are still unsettled. They relate to the drawing of straight baselines, including claims to historic waters, which have repercussions on navigational rights in certain waters, to the international character of some straits, to the outer limits of extended continental shelves, and to maritime delimitations between neighbouring States. A particular question arises as regards the rights within the coastal waters of the Spitzbergen/ Svalbard archipelago.

Until the pending questions are settled, it will be prudent to avoid or to carefully plan any activity that would be subject to national jurisdiction, such as scientific research, and would take place in the disputed waters or seabed areas. Overlapping claims and disputed areas do not necessarily prevent marine scientific research in large maritime zones. One of many examples of the pragmatic approach to undertake marine scientific research in disputed areas was the scientific mission of German research vessel Meteor in sea of Okhotsk in 2004.The relevant data were notified in due course to both the Russian Federation and Japan and the research tour went on without impediment. Even in areas more conflictual than the sea of Okhotsk a prudent attitude by researchers has permitted the development of marine research programmes⁵¹.

If an authorisation granted by one of the States concerned is not recognised by the other, this would result in the risk of seizure of the ship involved in the activity and of judicial action against her owner. In these cases, the ideal solution would be to involve the claimant States in the research under conditions which would be acceptable for all of them. The inclusion of disclaimer clauses in the authorisation, providing that the activities to be carried out do not prejudice pending legal questions, could help in reaching this result.

^{49.} According to Art. III of the 1825 treaty "(...) la même ligne méridienne du 141^e degré formera, dans son prolongement jusqu'à la mer Glaciale, la limite entre les possessions Russes et Britanniques sur le continent de l'Amérique Nord-Ouest". Does "Up to the Arctic Ocean" ("jusqu'à la Mer Glaciale") mean up to the Arctic Ocean included or up to the Arctic Ocean excluded? This is a really intriguing question as far as international rules on the interpretation of treaties are concerned.
50. This discovery sparked the rush towards exploring new

areas for possible oil and gas exploitation. Until now, the offshore hydrocarbon potential in the Beaufort Sea is definitely identified and much exploration work has been conducted in the area near Tuktoyaktuk on the Canadian side. Both countries have conducted research and issued permits for petroleum exploration near the disputed boundary line.

^{51.} Information on Meteor scientific mission is provided by Mr CATOIR F.

Chapter 2. Navigation in Arctic Waters





Professor Erik Franckx

Dr Irini Papanicolopulu

Introduction

This chapter presents the legal framework applicable to navigation in Arctic waters and how this can impact on the operation of a pan European research vessel⁵².

The legal regime applicable to navigation in Arctic waters results from the interplay between international norms and guidelines (usually adopted by the International Maritime Organisation (IMO) on the basis of the provisions of the 1982 United Nations Convention on the Law of the Sea (UNCLOS)), and national legislation (adopted by the flag and coastal States). Since the flag of a pan European research vessel is not determined yet, the following paragraphs will consider international norms and the legislation of the coastal States.

Section 1 The UNCLOS framework

UNCLOS applies to all seas, including the Arctic Ocean⁵³. The Arctic Ocean is therefore divided into different marine zones and the basic principles concerning the distribution of legislative and enforcement jurisdiction between the flag State, the coastal State and the port State are also applicable⁵⁴.

However, due to the particularly fragile nature of the polar environment and the risks that pollution may pose to it, the UNCLOS provides for enhanced powers of coastal States to regulate vessel-source pollution. According to Art. 234 UNCLOS, entitled "Ice-covered areas":

Coastal States have the right to adopt and enforce nondiscriminatory 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.

This provision derogates from the general obligation for coastal States under Art. 211, par. 5, UNCLOS to adopt rules and regulations that conform with and give effect "to generally accepted international rules and standards established through the competent international organization or general diplomatic conference". However, Art. 234 UNCLOS presents some obscure language, which has caused disagreement among commentators on its exact scope of application and the extent to which States may legislate disregarding the general standards established by the IMO.

Section 2 The IMO instruments⁵⁵

As already remarked with respect to general law of the sea and the UNCLOS, conventions adopted within the IMO on safety of navigation (e.g. SOLAS⁵⁶), protection of the marine environment from shipping (e.g. MARPOL⁵⁷), training of seafarers (e.g. STCW⁵⁸), labour conditions on board vessels (e.g. MLC⁵⁹), and other aspects of navigation are also applicable to the Arctic Ocean. Some of these treaties contain provisions specifically relating to navigation in ice, such as Regulations 5, 6 and 7, SOLAS Chapter V or the new section on *Guidance regarding training of masters and officers for ships operating in polar waters* introduced in STCW with the 2010 amendments⁶⁰. However, these conventions do not provide a coherent and sufficient regulation of all aspects relating to navigation in polar waters.

^{52.} The general aspects of navigation are presented in the Report on the Political, Legal and Administrative Issues of Operating the Aurora Borealis in the Arctic and Antarctic Regions, Revised Version of 26 March 2010, prepared by SCOVAZZI T. and PAPANICOLOPULU I. for the European Research Icebreaker Consortium (ERICON) ('2010 Report') and will not be repeated here.

^{53.} As affirmed also by the States bordering the Arctic Ocean in the 2008 Illulissat Declaration and the 2009 Tromsø Declaration. 54. See 2010 Report, par. 5.

^{55.} This paragraph is based on FRANCKX E. & BOONE L., "New Developments in the Arctic: Protecting the Marine Environment from Increased Shipping", in The Law of the Sea Convention: US Accession and Globalization (Nordquist, M.H., Norton Moore, J., Soons, A.H. & Kim, H.-S., eds.), Leiden, Martinus Nijhoff Publishers, pp. 178-205 (2012).

^{56.} The International Convention for the Safety of Life at Sea, 1974, as amended.

^{57.} The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 Protocol relating thereto, as amended.

^{58.} The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers.

^{59.} The Maritime Labour Convention, 2006.

⁶⁰ In force since 1 January 2012.

In the light of the particular hazards posed to navigation by ice-covered marine areas, and the threats that an increase in navigation through Arctic waters may pose for the marine environment, Canadian officers proposed in the early 90s the drafting of a binding code. The proposal did not succeed at that time, and instead non-binding Guidelines were elaborated and adopted in 2002, which apply only in the Arctic. The Guidelines for Ships Operating in Arctic Ice-covered Waters⁶¹, adopted in 2002, was the first attempt to draft standards addressing specifically the risks and dangers of navigation in these waters. They were later revised and extended to apply also to Antarctic waters, becoming the 2009 Guidelines for Ships Operating in Polar Waters.62 The 2002 Guidelines address navigation in Arctic waters, while the 2009 Guidelines address navigation in polar waters generally and are thus applicable to both Arctic and Antarctic waters. Their content is guite similar, with some technical updates and some further stress on protection of the marine environment. Both sets of Guidelines are non-mandatory.

The IMO is presently working on a binding polar code that would set a uniform regime applicable to navigation in Arctic and Antarctic waters. The tentative date for completion of the first draft is 2012.

Section 3 IMO Guidelines for navigation in polar waters

The 2009 *Guidelines for Ships Operating in Polar Waters*⁶³ apply to all ships, as defined in SOLAS, and "are intended to address those additional provisions deemed necessary for consideration beyond existing requirements of the SOLAS and MARPOL Conventions, in order to take into account the climatic conditions of polar waters and to meet appropriate standards of maritime safety and pollution prevention". They include a general part and three other parts on construction, equipment, and operation, each subdivided into chapters.

The 2009 Guidelines are non-mandatory. States are invited to take appropriate steps to give effect to the Guidelines for ships constructed on or after 1 January 2011 and, "as far as is reasonable and practicable" for

62. Discussed below. Section 3.

ships constructed before that date. States are also recommended to bring the Guidelines "to the attention of shipowners, ship operators, ship designers, shipbuilders, ship repairers, equipment manufacturers and installers and all other parties concerned with the operation of ships in polar waters". Notwithstanding their non-binding nature, the Guidelines are relevant in many aspects, and it is to be considered that by relying on them one would save time and enhance the chances of a binding regime becoming operational in the not too distant future.

The Guidelines apply to polar waters, including both Arctic and Antarctic waters, defined as follows:

G-3.3 Arctic waters means those waters which are located north of a line extending from latitude 58°00'.0 N, longitude 042°00'.0 W to latitude 64°37'.0 N, longitude 035°27'.0 W and thence by a rhumb line to latitude 67°03'.9 N, longitude 026°33'.4 W and thence by a rhumb line to Sørkapp, Jan Mayen and by the southern shore of Jan Mayen to the Island of Bjørnøya and thence by a great circle line from the Island of Bjørnøya to Cap Kanin Nos and thence by the northern shore of the Asian continent eastward to the Bering Strait and thence from the Bering Strait westward to latitude 60° N as far as II'pyrskiy and following the 60th North parallel eastward as far as and including Etolin Strait and thence by the northern shore of the North American continent as far south as latitude 60° N and thence eastward along parallel of latitude 60°.N, to longitude 56°37'.1 W and thence to the latitude 58°00'.0 N, longitude 042°00'.0 W

G-3.4 Antarctic waters means those waters which are south of 60° S.

According to the Guidelines, "only those ships with a Polar Class designation or a comparable alternative standard of ice-strengthening appropriate to the anticipated ice conditions should operate in polar icecovered waters". "Ice-covered waters" are in turn defined as "polar waters where local ice conditions present a structural risk to a ship", a definition that leaves room for divergent interpretations. Furthermore, "all ships operating in polar ice-covered waters should carry at least one Ice Navigator"⁶⁴.

Section 4 Other relevant instruments

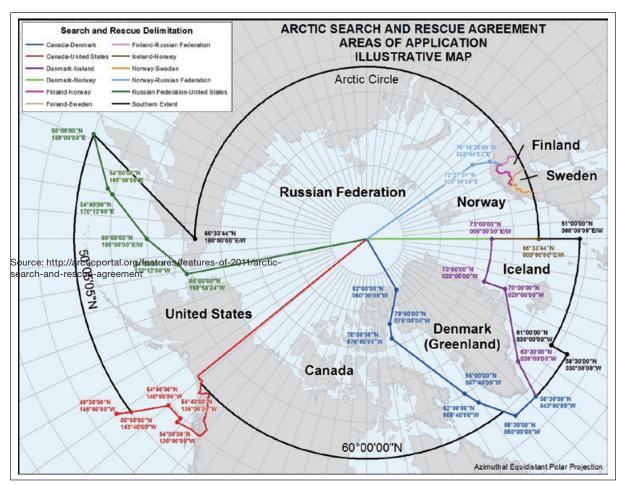
On 12 May 2011, the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic was adopted by the eight governments that are members of the Arctic Council, after having been negotiated by a task force established under the auspices of

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^{61.} MSC/Circ.1056; MEPC/Circ.399 of 23 December 2002. Guidelines for Ships Operating in Arctic Ice-covered Waters. Adopted by the MSC at its seventy-sixth session (2-13 December 2002) and by the MEPC at its forty-eight session (7-11 October 2002).

^{63.} A/26/Res 1024 of 18 January 2010. Guidelines for Ships Operating in Polar Waters. Adopted on 2 December 2009.

^{64. &}quot;G-3.12 *Ice Navigator* means any individual who, in addition to being qualified under the STCW Convention, is specially trained and otherwise qualified to direct the movement of a ship in ice-covered waters".



Source: http://arcticportal.org/features/features-of-2011/arctic-search-and-rescue-agreement

that Council.⁶⁵ This is the first treaty adopted pursuant to an initiative taken by the Arctic Council.

This agreement tries to adapt the normal SAR regime to the Arctic, where the country to whom the demand is first addressed receives some priority in the rescue operation, and does not provide additional regulation for shipping or affect the delimitation of boundaries.⁶⁶ It delimits the parties' SAR Areas in the Arctic, defines the responsible national authorities, and contains provisions which aim to strengthen aeronautical and maritime search and rescue cooperation and coordination in the Arctic.

Section 5 National special regimes (Canada, Russian Federation)

National legislation may also impact on the regime applicable to maritime navigation, in particular since most of the waters of the Arctic Ocean fall within the maritime zones of its coastal States. Russia and Canada have adopted legislation specifically concerning navigation in Arctic waters that will be presented in the following paragraphs.

1. Russian Federation⁶⁷

The current legal regime of Arctic marine shipping in the Northern Sea Route is essentially based on the

^{65.} Text available at http://arctic-council.org/filearchive/ Arctic%20SAR%20Agreement%20EN%20FINAL%20for%20 signature%2021-Apr-2011.pdf

^{66.} According to Art. 3(2) "The delimitation of search and rescue regions is not related to and shall not prejudice the delimitation of any boundary between States or their sovereignty, sovereign rights or jurisdiction".

^{67.} This paragraph is based on FRANCKX E., "The Legal Regime of Navigation in the Russian Arctic", in Journal of Transnational Law and Policy, vol. 12, 2009, pp. 327-342.

1990 Regulations for Navigation on the Seaways of the Northern Sea Route, the 1996 Guide to Navigating Through the Northern Sea Route, the 1996 Regulations for Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route, and the 1996 Requirements for the Design, Equipment, and Supplies of Vessels Navigating the Northern Sea Route.

According to the 1990 Regulations, the Northern Sea Route is defined as:

the essential national transportational line of the USSR that is situated within its inland seas, territorial sea (territorial waters), or exclusive economic zone adjacent to the USSR Northern Coast, and includes seaways suitable for leading ships in ice, the extreme points of which are limited in the west by the Western entrances to the Novaya Zemlya Straits and the meridian running north through Mys Zhelaniya, and in the east (in the Bering Strait) by the parallel 66° N and the meridian 168°58'37" W⁶⁸.

Ships wishing to navigate through the Northern Sea Route have to address a request to the Administration of the Northern Sea Route, which is the authority granting permission. This permission however does not include the authorisation to conduct marine scientific research, fish, or engage in tourism. For all these activities, an additional permit of the Ministry of Foreign Affairs of the Russian Federation is required.

With respect more concretely to marine scientific research, according to a decision approved by the Government of the Russian Federation on 30 July 2004, entitled Rules for Scientific Research in the Internal Sea Waters, Territorial Sea, Exclusive Economic Zone and the Continental Shelf of the Russian Federation,⁶⁹ the authorization to conduct marine scientific research is at present granted by the Ministry of Education and Science of the Russian Federation. The latter has to receive prior approval from a number of other interested federal agencies, including, amongst others, the Ministries of Defence, Fisheries, and Natural Resource Management.

Special requirements have to be met by the vessel and the master of the ship. If the latter has not the required experience, a state pilot will be assigned. The vessel will be guided by means of either shore-based aircraft, conventional icebreaker leading, or icebreaker assisted pilotage, and appropriate radio contact must be maintained. Compulsory icebreaking pilotage is provided for in the Vil'kitskii, Shokal'skii, Dmitrii Laptev, and Sannikov straits.

The 1996 Regulations provide more detail about the procedure for being granted permits for navigation in

the Northern Sea Route. Accordingly, when the ship enters the Northern Sea Route, at least two pilots need to be taken on board, and the vessel must be brought under the control of the West or East Marine Operations Headquarters for icebreaking support and organization. In any case, the master of the vessel retains ultimate responsibility for the vessel. When a vessel does not comply with the requirements, it can either be expelled from the route, forced back into a convoy, or possibly receive delayed assistance.

Finally, the 1996 Requirements contain a detailed set of requirements, for all vessels with gross registered tonnage of 300 tonnes and above, in order to ensure the safety of navigation, and the protection of the Arctic marine environment from pollution. Requirements relate to the class of the vessel, the hull, the machinery plant, propeller blades, equipment to treat waste water, stability, emergency facilities, and the master and crew. Lastly, Russian vessel-source pollution standards for the Northern Sea Route are stricter, at least in some respects, than normal MARPOL 73/78 requirements.

The Russian Federation legislation on navigation in the Arctic waters is set to change: a bill on different navigation aspects is currently under discussion in the Parliament.

2. Canada⁷⁰

The basic law governing navigation in the Canadian Arctic maritime zones is the *Arctic Waters Pollution Prevention Act* (AWPPA) as complemented by the *Arctic Shipping Pollution Prevention Regulations* (ASPPR). The AWPPA has been recently amended to apply in the internal waters, territorial sea and exclusive economic zone of Canada. According to the definition provided in AWPPA

"arctic waters" means the internal waters of Canada and the waters of the territorial sea of Canada and the exclusive economic zone of Canada, within the area enclosed by the 60th parallel of north latitude, the 141st meridian of west longitude and the outer limit of the exclusive economic zone; however, where the international boundary between Canada and Greenland is less than 200 nautical miles from the baselines of the territorial sea of Canada, the international boundary shall be substituted for that outer limit.

Arctic waters of Canada are divided into 16 shipping safety control zones. According to the Canadian legislation, the possibility of having access to each zone depends on the time of the year and the type of the ship that attempts navigation; ships are classified based on the thickness in feet of ice that the vessel would have

^{68.} It is likely that the regulations apply also beyond the 200 n.m. exclusive economic zone.

^{69.} Collection of the Laws of the Russian Federation, 2004, No. 32, art. 3338.

^{70.} This paragraph is based on VANDERZWAAG D.L. et al., "Governance of Arctic Marine Shipping", Report of 10 October 2008.

the power and strength to break, and five ships types. Access outside these times/zones may be possible on the basis of the Arctic Ice Regime Shipping System (AIRSS); in those cases, ships are requested to have on board a qualified ice navigator, and to submit information concerning their travel.

AWPPA generally prohibits the deposit of waste from vessels. It requests the master of any ship that has deposited waste, or that is in distress and for that reason is in danger of causing any deposit of waste except as permitted by the AWPPA, to report such deposit or the condition of distress.

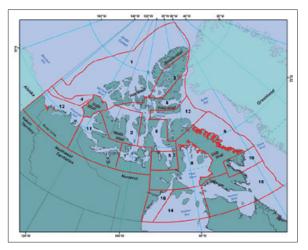
The 2001 *Canada Shipping Act* generally regulates shipping by Canadian flagged vessels and is subject to the regulations of the AWPPA. The Shipping Act is relevant to pollution control in the Arctic, since it allows for regulations to be issued regarding pollution discharges and the management of ballast water for all vessels, including foreign ships such as those that may be in the exclusive economic zone. *Ballast Water Control and Management Regulations* have therefore been issued in 2006, and *Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals* have been issued in 2007.

The Marine Liability Act enacts the CLC and Fund Convention in Canada. At the same time, it regulates pollution of the marine environment beyond what is provided in these treaties, and establishes strict liability for pollution of the Canadian Arctic waters.

Finally, it is to be noted that, in ratifying MARPOL, Canada made a declaration according to which Canadian legislation concerning the Arctic waters prevails on MARPOL regulation⁷¹.

Conclusion

This brief overview highlights the relevance of both international regulations and national legislation concerning navigation in Arctic waters for the operation of a pan-



Schedule 2 of the Shipping Safety Control Zones Order, SOR/2010-131, s. 8.

European research vessel. The regime described will in fact apply to such a vessel when moving from one place to another and, in addition to a more specific regime, when conducting scientific research. Various aspects of navigation are affected by the existing legal regime, including the construction and operation of the vessel, its manning and the training of its crew, and its ability to navigate in ice-covered areas without assistance. The need to ensure safety of navigation and protect the fragile Arctic environment may constrain in some respects the operation of the vessel. Furthermore, it is necessary to be aware of the legal status of the different maritime zones into which the Arctic Ocean is divided⁷².

This regime is not uniform, e.g. concerning ship classes and requirements for navigation, and is made up of instruments having a varied legal relevance: national legislation and guidelines, treaties, soft law. The Russian and Canadian legislation is of particular importance, since these two States are the gatekeepers of the Arctic Ocean. At the same time, the regime is rapidly developing at both domestic and international levels, e.g. with the elaboration of a mandatory polar code. Therefore the information contained in this overview should be regularly updated with respect not only to navigation, but also to construction and equipment of the vessel.

72. On this issues see Chapter 1.

^{71. (}a) The Government of Canada considers that it has the right in accordance with international law to adopt and enforce special non-discrimination laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered waters where particularly severe climatic conditions and the presence of ice covering such waters 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.
(b) Consequently, Canada considers that its accession to the Protocol of 1978, as amended, relating to the International Convention for the Prevention of Pollution from Ships, 1973
(MARPOL 73/78) is without prejudice to such Canadian laws and regulations as are now or may in the future be established in respect of Arctic waters within or adjacent to Canada.

Chapter 3. The International Legal Regime of Marine Scientific Research Applicable to the Arctic Ocean



Professor Alfred H.A. Soons

Introduction

Apart from the rules applicable to the navigation in Arctic waters, the actual research operations of a pan-European research vessel will also be subject to the rules of the international law of the sea relating to the conduct of marine scientific research.

This chapter will provide a brief overview of this regime⁷³, and identify some of the main issues confronting the operations of such a vessel.

The chapter will focus on the application of the international legal regime for marine scientific research (MSR) as provided in the 1982 UN Convention on the Law of the Sea (UNCLOS), in particular its Part XIII. These provisions can to a very large extent be regarded as reflecting general customary international law, and thus codify also the rules applicable to non-parties to UNCLOS, such as (currently) the United States.

Potentially relevant provisions of other international agreements, such as the Convention on Biological Diversity or the Treaty on Spitzbergen/Svalbard, are not addressed here.

Section 1 Summary of the legal regime

It will not be attempted to analyze here the regime in any detail; for this purpose reference must be made to other publications.⁷⁴ Only for the purpose of a basic understanding the essentials of the regime are briefly summarized here.

UNCLOS does not contain a definition of MSR. Its meaning must be inferred from the provisions of the Convention. In principle, any collection at sea of data concerning the marine environment would be covered by the term, but several data collecting activities are excluded because they are governed by separate regimes. The most important ones are resource exploration and hydrographic surveying; with respect to the latter differing views exist. There is uncertainty about certain "operational oceanographic data collection" activities. The definitional question will mainly be relevant when the research vessel will undertake commercial activities not constituting MSR: for such activities undertaken in areas under coastal State jurisdiction a prior license from the coastal State will always be required.

UNCLOS provides for an obligation to promote MSR and international co-operation in MSR, to promote favourable conditions for MSR, and to engage in publication and dissemination of information and knowledge (artt. 242-244 UNCLOS).

All MSR to be conducted in waters under the sovereignty of coastal States (maritime internal waters, archipelagic waters and territorial sea) need the prior consent of the coastal State. This applies also to ships exercising the rights of innocent passage, transit passage through international straits, or archipelagic sealanes passage. In the exercise of their sovereignty, coastal States are entitled to discretionary refusal of consent, unless of course other treaty commitments provide otherwise (artt. 245, 19(2)(j), 21(1)(g), 40 and 54 UNCLOS).

For MSR in the exclusive economic zone (EEZ) or on the continental shelf (CS), the consent of the coastal State must be requested, through official channels, at least six months in advance of the expected starting date of the actual research. With the request, detailed information on the research project must be submitted to the coastal State (artt. 246, 248 and 250 UNCLOS).

The coastal State should normally grant its consent, but in some limited situations the coastal State has a discretionary power to refuse consent: when the research is of direct significance for the exploration or exploitation of natural resources, when it involves drilling, the use of explosives, or the introduction of harmful substances into the marine environment, when it involves the operation of installations or structures, when inaccurate information was provided, or when there are outstanding obligations from previous research projects (art. 246(3) and (5)). In

^{73.} More detailed information on marine scientific research can be found in conference materials "Arctic Science, International Law and Climate Change: Legal Aspects of Marine Science in the Arctic Ocean" to be published in 2012 under edition of TIROCH K., WASUM-RAINER S., WINKELMANN I.

^{74.} See the revised Guide to the implementation of the relevant provisions of the United Nations Convention on the Law of the Sea, United Nations, New York 2010.

SOONS A.H.A., "Marine scientific research and the law of the sea" (Deventer, Kluwer Law and Taxation Publishers, 1982). GORINA-YSERN M., "An International Regime for Marine Scientific Research" (Ardsley, NY, Transnational Publishers, 2003). WEGELEIN F.H. Th., "Marine Scientific Research. The

Operation and Status of Research Vessels and Other Platforms in International Law" (Leiden/Boston, Martinus Nijhoff Publishers, 2005).

Maritime Administrations

Russian Federation http://www.mintrans.ru/ http://government.ru/eng/power/68/ **Northern Sea Route Administration** http://www.morflot.ru/index.php?cid=21 Canada http://www.tc.gc.ca/eng/marine-menu.htm Denmark http://www.dma.dk/Sider/Home.aspx Greenland http://uk.nanoq.gl/ **Faroe Islands** http://www.fma.fo/ **United States of America** http://www.marad.dot.gov/ http://www.uscg.mil/ Norway http://old.sjofartsdir.no/en/

case of research projects to be conducted in areas of the continental shelf beyond 200 nm, the coastal State may only exercise its discretionary powers to withhold consent for research of direct significance for resource exploitation in respect of publicly designated areas of the continental shelf where exploitation is occurring or about to begin (art. 246(6).

When consent has been granted, the research State is under an obligation to comply with a series of obligations concerning the participation of coastal State officials or scientists, and providing access to the research results and data and samples obtained, including assistance with the assessment and interpretation of such results, data and samples. Where the coastal State has given consent in cases of research projects coming within the scope of its discretionary power to refuse, it may attach any conditions it deems fit (art. 249).

In cases where the coastal State has not reacted to the request within 4 months, the research may be commenced after six months of the submission of the request ("implied consent") (art. 252).

When the research is conducted without conforming with the information submitted to, or the conditions imposed by, the coastal State, that State may suspend or even order cessation of the research project (art. 253).

Neighboring land-locked and geographically disadvantaged States (LLGDS) are entitled to receive notification of planned MSR projects within the region and may request information and even participation in the research (art. 254).

A specific option for arriving at simplified procedures

for obtaining consent in cases of research projects to be conducted by, or under the auspices of, international organizations, and involving multiple coastal States, is provided for in art. 247. Only the Intergovernmental Oceanographic Commission (IOC) has so far adopted such procedures (see below).⁷⁵

MSR to be conducted in the water column beyond the EEZ or in the International Seabed Area is free. (art. 256-257)

The deployment of scientific research installations or equipment is subject to the same conditions as MSR by vessels (art. 258-262).

UNCLOS also contains provisions on responsibility and liability concerning MSR, as well as on dispute settlement obligations and procedures (art. 263-265).

Section 2 Some issues to be addressed

1. Involvement of the coastal States

In view of the consent regime applying to significant areas of the Arctic Ocean (all areas up to 200 nm, and for seabed research also all continental shelf areas beyond 200 nm), it seems imperative to involve from the earliest stages all five Arctic Ocean coastal States in the planning of the research projects to be carried out by the research vessel.

In addition, the International Seabed Authority may express an interest, depending on whether ultimately some parts of the Arctic Ocean will be subject to its authority.

Since coastal States have the right to be represented on board research vessels and/or to participate in the research at their request, the planning of cruises should include reserving space for such participants on board, as well as their transfer to/from the ship.

2. Which State applies for consent?

It is not required that the flag State of the research vessel conducts the formalities for requesting consent (usually through diplomatic channels). In practice this can be done by any State willing to undertake this and the ensuing responsibility to ensure compliance with the rules of international law and conditions set by the coastal States.

^{75.} IOC Assembly Res. XXIII-8 (2005). See Intergovernmental Oceanographic Commission. Internal Procedure for the Application of Article 247 of UNCLOS by the Intergovernmental Oceanographic Commission of UNESCO – 2007.

Chapter 3. The International Legal Regime of Marine Scientific Research Applicable to the Arctic Ocean

However, if the vessel belongs to the flag State's government, it should be the flag State's duty to undertake this responsibility.

3. Simplified procedures

Since the application of the consent regime on a bilateral basis can be a very time-consuming and complicated matter in the case of a pan-European research vessel operating routinely in the waters of a small group of coastal States, it may be advisable to seek to arrive in advance at a simplified procedure among the group of Arctic coastal States and the flag State of the vessel (or the main researching States). This would require the conclusion of an international agreement, unless an existing international organization could be used for the adoption of such a procedure. However, the current Procedure adopted by the IOC for implementing Art. 247 of UNCLOS will not be suitable for use by a pan-European research vessel in view of its multilateral nature and scope, and cumbersome procedures. An arrangement agreed to within the Arctic Council might offer better prospects for practical implementation in this context.



Expedition in Svalbard © iStockphoto

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Chapter 4. Third-party Liability and Marine Insurance Issues





Professor René Lefeber

Ms Charlotte Breide

Introduction

The operation of a research vessel, such as the proposed Aurora Borealis, creates a number of potential risks. These include the normal risks associated with shipping operations, including, for example: damage to the vessel and equipment; injury and loss of life to crew and passengers; damage to other vessels, and possible injury and loss of life to third parties, through collisions; pollution damage; wreck removal costs; and legal costs associated with defence of claims. In addition, the particular nature of a research vessel's work may lead to third party claims arising from a number of sources: damage to scientific equipment carried on board but not part of the ship's machinery; damage caused by deployment of scientific equipment such as remote operation vehicles (e.g. through damage to other vessels); injury or death of scientific staff who are neither crew nor passengers; and injuries or deaths associated with specialised scientific activities, such as diving operations.

In case of realisation of one of the above-mentioned risks, most aggrieved parties are third parties who are not dependent on the court of one particular State for lodging a claim for redress of the damage. Section 1 will deal with third-party liability of seagoing vessels and give an overview of the international legal framework for the settlement of such claims. Insurance for crew and scientific staff is discussed in Section 2 that deals with different types of marine insurance. Sections 3 and 4 address issues related to the liability of States participating in the operation of a research vessel and the international liability of the participating States respectively. Finally, Section 5 includes some recommendations.

Section 1 Third-party Liability of Sea-going Vessels

Domestic legal systems provide for civil liability regimes enabling natural and legal persons to bring claims for damages suffered by them. Civil liability is imposed on the person whose act or omission caused such damage.

With respect to maritime claims, the domestic laws of many States contain rules relating to the limitation of liability. International rules can be found in the 1976 Convention on Limitation for Maritime Claims, as amended by the 1996 Protocol (LLMC). The implementation of the LLMC in the domestic law is also relevant, because the LLMC leaves the regulation of several issues at the discretion of States and does not provide for complete uniformity. For example, the Convention permits States not to apply it to ships suitable for and engaged in drilling, but only if the State has established higher limits at the domestic level or is a party to an international convention regulating the system of liability in respect of such ships (Art. 15.4 LLMC). If a research vessel has a drilling facility, the option to limit liability in accordance with the LLMC may thus not be available.

Limitation of liability can be invoked when claims are brought before the courts of a State which has a domestic law relating to the limitation of liability for maritime claims. Claims are normally brought in jurisdictions where the liable person has assets, including ships. Since a ship is a movable asset and is likely to navigate the waters of more than one State, it runs the risk of detention in multiple jurisdictions.

The LLMC permits the shipowner to limit his liability for claims brought against him in connection with the operation of the ship. The shipowner is defined as the owner, charterer, manager or operator of a seagoing ship (Art. 1.2 LLMC).

It is thus important to determine which States are involved in the management and operation of a research vessel (participating States) and to determine whether their domestic laws allow for the limitation of liability for maritime claims. As for the operation of a research vessel in Arctic waters, it is also relevant that most Arctic States are a party to the LLMC, namely Canada, Denmark, Norway and the Russian Federation; domestic legislation has been enacted in these States to implement the LLMC⁷⁶. The United States is not a party to the LLMC, but has adopted domestic legislation relating to the limitation of liability for maritime claims⁷⁷. As for the management of the research vessel, choices with

^{76.} See, for Canada, Maritime Liability Act.

^{77.} See Limitation of Liability Act of 1851.

respect to its legal structure – including its incorporation, seat and principal place of business of its management – as well as its flag will be relevant (see Deliverable 6.1).

Claims subject to limitation under the LLMC (Art. 2 LLMC), relevant for the operation of a research vessel, include:

- Claims in respect of loss of life or personal injury, or loss of or damage to property (including damage to harbour works, basins and waterways and aids to navigation) occurring on board or in direct connection with the operation of the ship, and consequential loss resulting therefrom;
- Claims in respect of other loss resulting from infringement of rights other than contractual rights in direct connection with the operation of the ship;
- Claims in respect of the raising, removal, destruction or the rendering harmless of a ship which is sunk, wrecked, stranded or abandoned, including anything that is or has been on board such ship;
- Claims of a person other than the person liable in respect of measures taken in order to avert or minimise loss for which the person liable may limit his liability in accordance with the LLMC, and further loss caused by such measures.

The financial limits of liability under the LLMC for claims other than passenger claims are different for (a) claims for loss of life or personal injury and (b) other claims (Art. 6 LLMC). The payment of claims for loss of life or personal injury receives priority over the payment of any other claims (Art. 6.2 LLMC). The maximum amount of liability for each of these categories of claims depends on the ship's gross tonnage (to be calculated in accordance with the tonnage measurement rules contained in Annex I of the 1969 International Convention on Tonnage Measurement of Ships). The LLMC contains separate limits for loss of life or personal injury of passengers (Art. 7 LLMC). These higher limits can only be invoked under a contract for carriage of persons or goods entrusted to them (Art. 7.2 LLMC); it does not apply to scientists, or persons accompanying them, under a contract for the conduct of research.

The LLMC provides for a general regime for the limitation of liability for maritime claims. However, not all maritime claims are eligible for limitation under the LLMC. The LLMC itself provides for several exceptions (Art. 3 LLMC). Furthermore, special treaty regimes for civil liability have been developed since the adoption of the LLMC; the application of the LLMC depends on the relationship between the LLMC and these treaty regimes. The majority of these treaty regimes concern claims that will not arise out of the operation of research vessels⁷⁸.

Only the following claims are subject to treaty regimes that are relevant⁷⁹.

- Claims for bunker oil pollution damage. Such claims are governed by the 2001 Convention on Civil Liability for Bunker Oil Pollution Damage (Bunker Convention). The Convention provides for no-fault liability. It does not affect the rights of the ship owner under any applicable national or international regime, such as the LLMC (Art. 6). Since oil may be used for propulsion and/or activities on board a research vessel, this treaty regime may be applicable (see further below).
- Claims for the costs of locating, marking and removing of wrecks. Such claims are governed by the 2007

Such claims are governed by the 1969 International Convention on Civil Liability for Oil Pollution Damage, as amended. (b) Claims subject to any international convention or national legislation governing or prohibiting limitation of liability for nuclear damage (Art. 3(c) LLMC), including damage caused by the maritime carriage of nuclear material. Such claims are governed by the 1960 Convention on Third Party Liability in the Field of Nuclear Energy, as amended (Paris Convention); the 1963 Convention on Civil Liability for Nuclear Damage, as amended (Vienna Convention); the 1971 Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material; and the 1988 Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention. (c) Claims against the ship owner of a nuclear ship for nuclear damage (Art. 3(d) LLMC). Such claims are governed by the 1962 Convention on the Liability of Operators of Nuclear Ships; this Convention is not in force. (d) Claims for damage caused by the maritime carriage of hazardous and noxious substances. Such claims are governed by the 1996 International Convention on Liability and Compensation in Connection with Carriage of Hazardous and Noxious Substances by Sea, as amended: this Convention is not in force. Between parties, it will supersede any pre-existing convention to the extent that such convention is in conflict with it (Art. 42) and, hence, the lower limits under the LLMC. (e) Claims for damage caused by the maritime carriage of hazardous wastes. Such claims are governed by the 1999 Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and their Disposal; this Protocol to the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal is not in force. The Protocol does not apply if another treaty on liability and compensation applies (Art. 11) and, hence, the LLMC will prevail between parties. (f) Claims for oil pollution damage resulting from the exploration and exploitation of seabed mineral resources. Such claims are governed by the 1977 Convention on Civil Liability for Oil Pollution Damage Resulting from the Exploration and Exploitation of Seabed Mineral Resources; this Convention is not in force and only applies in areas with the jurisdiction of states parties which have coastlines on the North Sea, the Baltic Sea and the Atlantic Ocean north of 36° North Latitude. The Convention does not address its relationship with the LLMC, but its limits will prevail between parties over those of the LLMC pursuant to Article 30 of the 1969 Vienna Convention on the Law of Treaties.

79. It is noted that a regulatory liability regime exists with respect to liability for costs of response action caused by an environmental emergency in the Antarctic Treaty area, namely the 2005 Annex VI to the Protocol on Environmental Protection to the Antarctic Treaty; this treaty regime is not yet in force.

^{78.} These claims are the following. (a) Claims for damage caused by the maritime carriage of oil in bulk as cargo (Art. 3(b) LLMC).

International Convention on the Removal of Wrecks (Wreck Convention); this Convention is not in force. The Convention provides for no-fault liability. It does not affect the rights of the registered owner under any applicable national or international regime, such as the LLMC (Art. 6). In case the research vessel runs aground, this treaty regime may be applicable (see further below).

The Bunker Convention provides for uniform international rules and procedures for determining questions of liability and providing adequate compensation for damage caused by pollution resulting from the escape or discharge of bunker oil from ships. Pursuant to the Convention, the ship owner at the time of an incident is strictly liable for pollution damage in the territory, including the territorial sea, and the exclusive economic zone of State parties (Arts. 2 and 3). The ship owner is defined as the owner, including the registered owner, bareboat charterer, manager and operator of the ship (Art. 1.3). Pollution damage is defined as (Arts. 1.7 and 1.9):

- Loss or damage caused outside the ship by contamination resulting from the escape or discharge of bunker oil from the ship, wherever such escape or discharge may occur, provided that compensation for impairment of the environment other than loss of profit from such impairment is limited to costs of reasonable measures of reinstatement actually undertaken or to be undertaken;
- The costs of any reasonable measures taken by any person after an incident has occurred to prevent or minimise pollution damage and further loss or damage caused by such measures.

With the exception of the United States, all Arctic States (Canada, Denmark, Norway and the Russian Federation) are parties to this Convention.

The Wreck Convention provides for uniform international rules and procedures to ensure the prompt removal of wrecks in the exclusive economic zone of a State party and the payment of compensation for the costs therein involved. A State party may extend the application of the Convention to its internal waters and territorial sea (Art. 3). Pursuant to the Convention, the registered owner is strictly liable for the costs of locating, marking and removing a wreck, unless the maritime casualty resulted from the use of force, an intentional action of a third party, or a wrongful act of the authorities responsible for the maintenance of navigational aids (Art. 10.1). None of the Arctic States have yet expressed their consent to be bound to this Convention.

Section 2 Marine Insurance Issues

This section provides a brief outline of the types of marine insurance commonly available and used by nongovernment vessels (including many research vessels in the private sector), followed by an enumeration of issues which should be considered in determining the appropriate insurance coverage for the proposed vessel. It should be noted that these comments are general in nature, as the specific insurance issues that arise will depend upon the precise nature of the legal arrangements adopted for registration of the vessel, and details of its use and operations (in particular the level of direction and control of actual voyages).

There are two main types of marine insurance, hull and machinery insurance, and protection and indemnity insurance, as well as a number of forms of "additional cover". The main features of these policies are outlined below:

- Hull and machinery insurance. This insurance extends to the ship itself, including its equipment, fuel and spare parts. Types of loss include total loss of the vessel, damage to the vessel, and damage to another vessel through collision. Coverage is limited to the value of the insured vessel. Coverage is not "all risk", but rather is limited to named risks, and will specify areas of navigation (which will be highly relevant to insurance of risk for Arctic and Antarctic waters).
- Protection and indemnity insurance. P&I insurance covers a number of additional, third-party liabilities not addressed in hull and machinery policies. Coverage is available for a number of categories of loss, depending on the policy: losses from personal injury or death of crew or others on board (e.g. scientific staff); damage to other vessels in excess of hull and machinery coverage; damage to docks and other fixed or movable installations; costs of defence of claims; wreck removal; fines and other penalties; pollution liability.
- Loss of hire. Additional coverage may be obtained for loss of revenue caused as a result of damage that may result in the vessel being unavailable for service for a period of time. This may be relevant for a research vessel which is made available for hire.
- Other coverage. In addition to the standard coverage, insurance companies have developed specific policies to cover particular types of vessel operations, such as cruise vessels and tours. Such purpose-designed coverage has been utilised for research vessels, and should be considered in light of such unique features of their operations as carriage and deployment of third-party scientific equipment, and operations offvessel, including diving operations (which have led to liability claims in a number of cases).

Under the Bunker Convention and the Wreck Convention, the registered owner is required to maintain insurance or other financial security to cover its liability in an amount equal to the limits of liability under the applicable national or international limitation regime, but not exceeding an amount calculated in accordance with the LLMC (Arts. 7.1 and 12.1 respectively). A certificate attesting that financial security is in force must be carried on board the ship (Arts. 7.5 and 12.5 respectively).

In respect of a ship owned by a State, the provisions of the Bunker Convention and the Wreck Convention permit self-insurance. The provisions of these Conventions relating to financial security do not apply to a state-owned ship, provided that the ship carries a certificate stating that the ship is owned by a State and that the ship's liability is covered within the limits set by these Conventions (Arts. 7.14 and 12.14 respectively). Accordingly, if the participating States opt for a construction of collective ownership (see Deliverable 6.1), self-insurance is permitted under these Conventions.

The development of an appropriate policy for insurance coverage of a research vessel will, as noted above, depend on the actual arrangements adopted for registration and operation of the vessel, including the essential question of whether it will be operated as a government non-commercial vessel subject to immunity from various forms of liability. It is possible, however, to identify a number of questions and issues which should be addressed in that process.

- Selfinsurance. Government-owned vessels may simply be self-insured, as is common practice. That is, the government (or, in this case, governments) absorb the risk themselves rather than incur the potentially significant operational costs of insurance coverage. This choice is not necessarily dependent on whether the vessel is operating as a state-owned vessel on non-commercial service, and thus subject to immunity (see Deliverable 6.1, section 2). It is assumed that, even under an immunity arrangement, governments will still wish to compensate where appropriate as a matter of state responsibility. Self-insurance may be most appropriate for hull and machinery risks, which does not engage third parties, but it does raise questions related to apportionment of liability in any operating agreement (see below). Finally, the fact that marine insurance policies involve subrogation of claims (i.e. the insurer takes over the claim and would direct the case) may raise important concerns. For reasons of reputation and good relations, governments may not wish to see decisions on denial of compensation and litigation being in the hands of a private insurer.
- Validity of coverage. If the vessel causes damage to third parties while operating as a government vessel on non-commercial service, and subject to immunity

from civil suit (or statutory penalties), consideration should be given to the effectiveness of private insurance coverage. Marine insurance is based on compensation for actual losses to third parties for which a ship may be legally liable. If the decision to pay compensation is in fact a discretionary decision of a government or governments (i.e. because of the availability of an immunity defence), it might be argued that no actual liability or insured loss exists. This issue would need to be addressed in the development of any coverage.

- Scope of coverage. As noted above, research vessel operations may include damage to equipment which is not separate from the ship, and injury to staff who are employees of third party institutions (including potentially expensive costs of medical evacuation from remote polar areas). Consideration will have to be given to the scope of coverage, should insurance be obtained. Will these third party risks be covered as part of a policy for the vessel (in which case they will need to be specified), or will research institutions be required to provide proof of their own coverage, and appropriate waivers of liability? Where there is potential overlap between insurance coverage for the vessel and for scientific parties, indemnities ("knock for knock" arrangements) can specify that losses to each party will be born by their insurer, regardless of fault.
- Charter arrangements. If it should be decided to make the proposed vessel available for charter by other institutions, consideration should be given to requiring (through the appropriate form of charter-party agreement) that those institutions provide for full insurance coverage to an acceptable level for the duration of the voyage. Such arrangements are common in the commercial context, and would be especially important in a charter situation, as the protection of any immunity would likely be lost.
- Impact on agreement among parties. The various insurance and liability issues raised here will require attention in the development of the legal instrument for a research vessel. First, for operations conducted by the vessel under such a legal instrument, provisions should be included which would provide for the apportionment among participating States of insurance costs (if any) attributable to specific research projects. As one voyage may involve participation by multiple institutions, criteria and a process for the attribution of insurance costs to the entity operating the research vessel or individual participating State should be developed. Second, where damage or loss occurs (in particular where it is self-insured or in excess of insurance coverage), the legal instrument should provide for the attribution of such losses, whether based on degree of participation in the project or on actual

fault (i.e. where one party has caused the loss). Third, in cases where potential third party liability has arisen, a process will be required whereby it can be decided whether to accept or defend against the claim (as a decision to accept the claim may have implications for all parties). Finally, an effective and expeditious dispute settlement provision should be considered to allow for resolution of any issues arising in the context of the decisions set out here.

 MARPOL. The international Convention for the Prevention of Pollution from Ships (MARPOL) does not apply to a vessel if such vessel is entitled to immunity, i.e. if it is a government vessel or when it is on government service. Parties to MARPOL are, however, required to adopt measures to ensure that the vessel acts in a manner consistent with the Convention. MARPOL could still be applicable when the vessel is on commercial service and, hence, not entitled to immunity (Section A 3(3)).

Section 3 Residual Liability of Participating States

The exercise of the right to invoke limitation of liability in respect of maritime claims means that not all damages that may be caused by a research vessel may be redressed. This will be the case when the total amount of claims exceeds the maximum amount of liability under the applicable international or national liability regime. Accordingly, the residual damage will lie where it falls, unless redress is provided by a residual liability mechanism.

Residual liability mechanisms have, for example, been developed to provide redress for claims for oil pollution damage and nuclear damage in excess of the limits under the applicable liability regime. With respect to oil pollution damage, an international fund has been established to which the oil industry with an interest in the carriage of oil as cargo must contribute (1971 International Convention on the Establishment of an International Fund for Oil Pollution Damage, as amended). With respect to nuclear damage, the applicable regimes provide for residual liability of the installation State as well as ad-hoc collective liability of State parties to it (1963 Convention Supplementary to the Paris Convention on Third Party Liability in the Field of Nuclear Energy; 1997 Convention on Supplementary Compensation for Nuclear Damage). None of these existing residual liability mechanisms is relevant for the operation of a research vessel.

Pursuant to the Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities (UN Doc. A/Res/61/36), States should take all necessary measures to ensure that prompt and adequate compensation is available for victims of transboundary damage caused by hazardous activities located within their territory or otherwise under their jurisdiction or control (Principle 4.1). In the event that the measures taken are insufficient to provide adequate compensation, the States concerned should make additional financial resources available (Principle 4.5). Although the operation of a research vessel is not a typical example of a hazardous activity within the meaning of the Principles, participating States may wish to give effect to it for reasons of reputation and good relations.

In light of the above, participating States should consider whether the ship owner of the research vessel should avail himself of any right to invoke limitation of liability before domestic courts. If the participating States would like the shipowner to avail himself of such right, they should consider whether additional redress should be made available through a residual liability mechanism. Such a mechanism would have to establish the conditions under which it may be accessed and the modalities for sharing the liability among the participating States (in the context of a particular project, an example for sharing liability among participating States can be found in the 2007 Declaration on the Launchers Exploitation Phase of Ariane, Vega and Soyuz from the Guyana Space Centre).

Section 4 International Liability of Participating States

The ship owner's liability and any residual liability mechanism do not prejudge the application of the law relating to internationally wrongful acts. The participating States or an international organisation, if an international organisation is established to manage and operate the research vessel (see Deliverable 6.1), may be held liable by other States for an internationally wrongful act arising out of the management and operation of such vessel. There is an internationally wrongful act of a State or an international organisation when conduct consisting of an action or omission is: (a) attributable to it under international law; and (b) constitutes a breach of an international obligation incumbent on it. The conduct of marine scientific research and associated logistic activities constitute an act of a State or an international organisation if such research is undertaken by States or international organisations or on their behalf. The existence of a breach of an international obligation will have to be determined on a case-by-case basis, but could notably involve any of the provisions of the Convention

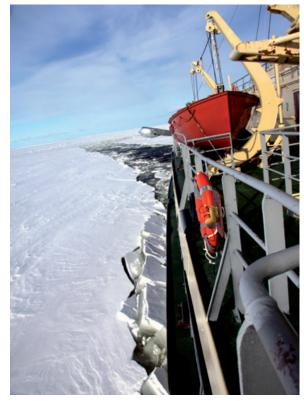
Chapter 4. Third-party Liability and Marine Insurance Issues

on the Law of the Sea. Pursuant to the Convention, States and international organisations shall be liable in accordance with international law for their failure to comply with their international obligations concerning the protection and preservation of the marine environment, including damage caused by pollution of the marine environment arising out of marine scientific research (Arts. 235 and 263). The relevant rules of international law can be found in the Articles on Responsibility of States for Internationally Wrongful Acts (UN Doc. A/Res/56/83) and the Draft Articles on Responsibility of International Organizations (UN Doc. A/CN.4/L.778).

Section 5 – Recommendations

When legal proceedings are initiated in respect of damages caused by the research vessel to a third party, it is recommended to invoke any applicable liability limitation regime for sea-going vessels. In case such legal proceedings are initiated before a domestic court, it is furthermore recommended that immunity from jurisdiction be invoked where the necessary legal requirements are complied with.

- To cover liability up to at least the limits of the LLMC 1996, it is recommended that financial security be obtained in the form of insurance. It is recommended that participating entities conclude an agreement that allocates the costs of insurance.
- 2. To compensate damages not covered by insurance, it is recommended that a special liability arrangement be established to consider claims. It is recommended that participating entities conclude an agreement that addresses the settlement of claims and allocates the costs of such an arrangement.
- 3. In the event that the research vessel is made available for charter by other entities, it is recommended that the charter agreement includes adequate provisions on the transfer of liability risks, including insurance coverage and indemnity.
- 4. It is recommended that a liability arrangement be established with the relevant scientific parties/ institutions involved in the research including appropriate mutual waivers of liability and knock for knock arrangements.



An icebreaker going through pack ice in polar area

The present document reflects the discussions and the recommendations made in the course of the Legal Advisory Panel, and developed in response to the interests formulated by representatives of polar and marine scientific communities. The report analyses some pertinent legal questions that would be applicable in course of operation of a pan-European research vessel in the Arctic.

Zones of National Jurisdiction

The first chapter draws a comprehensive "map" of different Arctic maritime boundaries and legal zones under sovereignty or jurisdiction of coastal States. It recalls that the seas and oceans (including Arctic) are divided into a number of zones (internal waters, territorial sea, contiguous zone, exclusive economic zone, continental shelf, high seas, international seabed area), each of the zones being regulated by specific rules.

The authors emphasize that there are still boundaries between Arctic States which have not been delimited; therefore the disputed areas (water column and seabed) between coastal States in the Arctic remain. An extremely prudent behaviour is recommended if a pan-European research vessel envisages conducting research in disputed areas. All claimant States should be involved in the research project in order to avoid delays and other complications, such as seizure of the vessel and judicial action against her owner.

Navigation in Arctic waters

The second chapter of the document addresses the legal framework applicable to the navigation in Arctic waters and presents the impact of the international and coastal States' national regulations (focusing on Russian Federation and Canada legislations) on the operation of a pan-European research vessel. It recalls that the navigation regime is not uniform and is based on instruments having a varied legal relevance: national legislation and guidelines, treaties, soft law. Moreover, it is rapidly developing at both domestic and international levels. The need to ensure safety of navigation and the protection of the fragile Arctic environment may limit in some respects the operation of a pan-European research vessel in the Arctic.

International legal regime of marine scientific research applicable to the Arctic Ocean

The third chapter of this report is devoted to one of the crucial issues for a polar pan-European research vessel: it deals with the legal framework applicable to marine scientific research in the Arctic. The UNCLOS provides for a specific regime for marine scientific research based on the different areas of water or seabed where it takes place. As the pan-European research vessel of reference for this report is to have a drilling rig, it should be underlined that drilling is one of a few limited situations when the coastal State has a discretionary power to refuse consent for research in its EEZ or on the continental shelf. As the vessel intends to be operated routinely in the areas under jurisdiction of a small group of coastal States, it is recommended that a multilateral agreement be reached in advance via a simplified procedure. The Arctic Council could be an appropriate forum for that.

Third-party Liability and Marine Insurance Issues

The fourth chapter focuses on a number of complex issues related to the third party liability of sea-going vessels, insurance for the crew and scientific staff, and international liability of participating States. It also provides an overview of the international legal framework for the settlement of different claims that could occur in the course of operation of a pan-European research vessel.

The authors recall that operation of such a vessel in the Arctic creates a number of potential risks. They give some guidelines to mitigate the liability of the owners and operators of the vessel in case of litigation. A number of national and international regulations contain rules relating to the limitation of liability of sea-going vessel in respect of damages caused by her. Therefore in case of proceedings, it is recommended that any applicable liability limitation regime be invoked. If the proceedings are initiated before a domestic court, the immunity from jurisdiction could be invoked by a public vessel employed on non-commercial governmental service.

Insurance is recommended to be taken out to cover the liability up to at least the limits of the Convention on Limitation for Maritime Claims. Special liability arrangements to address the settlement of claims and allocate costs should be concluded between the relevant scientific institutions (owners and charters of the vessel), including appropriate mutual waivers of liability and knock for knock arrangements.

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Bow of an icebreaker breaking through pack ice © iStockphoto



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