

MARITIME SAFETY COMMITTEE
93rd session
Agenda item 10

MSC 93/INF.12
11 March 2014
ENGLISH ONLY

SHIP DESIGN AND CONSTRUCTION

Workshop on Safe Ship Operations in the Arctic Ocean IMO Headquarters, London, 28 February 2014

Submitted by Finland

SUMMARY

Executive summary: The document informs the Committee of the outcome of the Workshop on Safe Ship Operations in the Arctic Ocean, held at IMO Headquarters on 28 February 2014

Strategic direction: 5.2

High-level action: 5.2.1

Planned output: 5.2.1.17

Action to be taken: Paragraph 6

Related documents: Circular Letter No.3427/Rev.1 and Add.1

1 A Workshop on Safe Ship Operations in the Arctic Ocean took place at IMO Headquarters in London on 28 February 2014. This international, interdisciplinary and inclusive workshop (Annexes 1 and 2) was hosted by the IMO along with the Arctic Options: Holistic Integration for Arctic Coastal Marine Sustainability project (www.arcticoptions.org), funded by the United States National Science Foundation and French Centre Nationale de la Recherche Scientifique and the Arctic Climate Change, Economy and Society (www.access-eu.org) project funded by the European Commission. Opened by the IMO Secretary-General (annex 3), the objective of this workshop was to facilitate information exchange among diverse experts and to consider issues and strategies for ensuring safe ship operations in the Arctic Ocean, taking into account IMO's ongoing work on the mandatory Polar Code, which is anticipated for completion in 2014.

2 Issues of infrastructure to support safe ship operations in the Arctic Ocean were considered broadly in terms of fixed, mobile and other physical assets (including observing, communications and information systems) as well as regulatory, policy and other governance mechanisms (including insurance). Without advocacy, bias or agendas that are commonly encountered with recommendations, observations from the workshop include:

- .1 sea ice is a common concern among diverse stakeholders, who collectively represent a system to ensure safe ship operations in the Arctic Ocean. However, stakeholders consider sea ice from strikingly different perspectives:
 - .1 international policymakers look at development and application of international instruments, including the mandatory Polar Code and United Nations Convention on the Law of the Sea (UNCLOS), which specifies "ice-covered areas" under Article 234;
 - .2 nations view their sovereignty, sovereign rights and jurisdictions, which are being impacted by diminishing sea ice, notably along the Northern Sea Route and Northwest Passage;
 - .3 scientists discover climatic, ecosystem and societal impacts associated with the 70% loss in sea-ice volume in the Arctic Ocean during the past three decades;
 - .4 seafarers look for navigational hazards, recognizing that bergy bits, growlers and ice floes exist in areas that may be classified as open water;
 - .5 insurers address risks of ship operations, identifying that an ice regime system would complement the Polar Waters Operational Manual that is anticipated with a mandatory Polar Code;
 - .6 environmentalists focus on wildlife and ecosystem impacts from reducing sea-ice coverage and increasing commercial activities in the Arctic Ocean;
 - .7 naval architects respond to requirements for classes of ice-strengthened and icebreaking vessels operating in polar waters;
 - .8 shipowners consider investments and operations based on market and environmental trends associated with access in the Arctic Ocean; and
 - .9 indigenous peoples struggle with impacts from decreasing sea ice and increasing commercial activities, especially with regard to their subsistence livelihoods;
- .2 an issue arising during the discussions centered on the extent to which there are common interests in sea-ice observations and analyses among these stakeholders in the sense that collaborative initiatives can produce results that are helpful to all;
- .3 it was recognized that there is an urgent need to strengthen all forms of infrastructure to make the Arctic safe for increased shipping. However, it was also observed that public agencies do not have the resources needed to provide this infrastructure as a public service. It was observed that:
 - .1 there has been a 30% decline in funding for hydrographic services that would produce and improve bathymetric charts, which currently cover only 8 to 11% of the Arctic Ocean;

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- .2 Arctic states have an unfunded mandate for their stewardship and investments, as reflected by the 2011 Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic and 2013 Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic; and
 - .3 support for infrastructure implementation to ensure safe ship operations in the Arctic Ocean is beyond the capacity of individual stakeholders; and
 - .4 an important implication of these observations is the need for innovative public-private partnerships to strengthen infrastructure for safe ship operations in the Arctic Ocean. Such partnerships would involve investments and sharing of assets as well as collaborations, such as crowd-sourcing from diverse ships to collect bathymetric data.

3 The Polar Code is expected to become legally-binding in the form of amendments to the International Convention for the Safety of Life at Sea (SOLAS) and various annexes of the International Convention for the Prevention of Pollution from Ships (MARPOL) with connections to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) and UNCLOS. However, the Polar Code will operate in a complex regulatory environment involving other regimes, including:

- .1 conservation strategies, such as Ecologically or Biologically Significant Areas (EBSA) under the Convention on Biological Diversity; and

Note: The Arctic EBSAs under the Convention on Biological Diversity were considered in the Regional Arctic EBSA workshop hosted by Finland in Helsinki 3 to 7 March 2014.

- .2 national regulations, such as the Canadian NORDREG system or the Russian Northern Sea Route Administration.

4 Handled properly, this institutional interplay can become a source of strength for the Polar Code. But there is a need to think carefully about the steps needed to turn this collection of regulatory arrangements into a coherent and fully integrated system.

5 Participants in the Workshop on Safe Ship Operations in the Arctic Ocean uniformly indicated that the rich dialogues were constructive. Coordinated by international research projects at the International Maritime Organization, such discussions could be used to further consider the above observations about sea-ice, public-private partnerships and institutional interplay.

Action requested of the Committee

6 The Committee is invited to note the information provided.

ANNEX 1

IMO CIRCULAR LETTER NO.3427/REV.1/ADD.1 WITH WORKSHOP AGENDA



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Ref. HD Circular Letter No.3427/Rev.1/Add.1
26 February 2014

To: All IMO Members
United Nations and specialized agencies
Intergovernmental organizations
Non-governmental organizations in consultative status

Subject: **Workshop on Safe Ship Operations in the Arctic Ocean
(28 February 2014)**

1 Reference is made to Circular Letter No.3427/Rev.1 of 23 December 2013, inviting participation at the "Workshop on Safe Ship Operations in the Arctic Ocean", organized in collaboration with two projects: the Arctic Options: Holistic Integration for Arctic Coastal-Marine Sustainability Project, funded by the National Science Foundation (United States), and the Arctic Climate Change, Economy and Society (ACCESS) Project, funded by the European Commission.

The workshop has been scheduled to take place on 28 February 2014 at IMO Headquarters in London.

2 The agenda for the workshop has now been finalized and is attached at annex. The attached agenda replaces the provisional agenda annexed to Circular Letter No.3427/Rev.1.

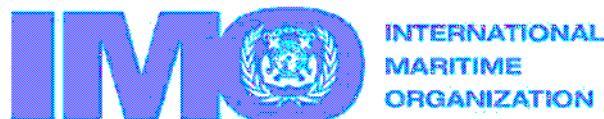
3 The Secretary-General would appreciate being informed, in due course, of the names of intended participants. Member States, international organizations and other entities intending to attend the workshop should inform the Subdivision for Protective Measures* of the Marine Environment Division as early as possible of the names and contact details of their participants, using the registration form attached to this circular letter.

4 Participants are expected to cover their own travel and accommodation costs and should ensure that they are in possession of any necessary entry and transit visas prior to their departure.

* Miss S. Mazzaretto at smazzare@imo.org

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Workshop on Safe Ship Operations in the Arctic Ocean

International Maritime Organization (IMO) Headquarters, London

28 February 2014

Co-sponsors:

International Maritime Organization (IMO)

Arctic Options: Holistic Integration for Arctic Coastal-Marine Sustainability Project
National Science Foundation (United States)

Arctic Climate Change, Economy and Society (ACCESS) Project
European Commission

Objective: Facilitate information exchange among diverse experts to consider issues and strategies for ensuring safe ship operations in the Arctic Ocean, taking into account IMO's on-going work on the mandatory Polar Code, which is anticipated for completion in 2014.

Agenda

Holistic Considerations for Arctic Ocean Shipping

- 09:00 Welcome and opening remarks
Mr. Koji Sekimizu (IMO Secretary-General)
- 09:10 Workshop goals and objectives
Prof. Paul Berkman (University of California Santa Barbara)
- 09:20 Introduction – National Science Foundation (Arctic Options) Project
Prof. Paul Berkman (University of California Santa Barbara)
- 09:25 Introduction – European Commission (ACCESS) Project
Prof. Jean Claude Gascard (Université Pierre et Marie Curie)
- 09:35 Progress with the Polar Code
Dr. Heike Deggim (IMO Marine Environment Division)
- 10:00 Emerging access along the Northern Sea Route
Mr. Yury Melenas (Mission of the Russian Federation to IMO)
- 10:15 Coffee

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- 10:45 International cooperation through the Arctic Council
Amb. Hannu Halinen (Finnish Ministry of Foreign Affairs)
11:00 Panel and open discussions – Key issues
11:45 Lunch

Evolving Context of the Polar Code in the Arctic Ocean

- 13:15 Arctic sea-ice trends
Prof. Peter Wadhams (University of Cambridge)
13:30 Arctic Ocean economics
Prof. Lawson Brigham (University of Alaska Fairbanks)
13:45 Arctic commercial shipping
Mr. Mads Boye Peterson (Nordic Bulk Carriers A/S)
14:00 Arctic shipborne tourism
Ms. Frigg Jørgensen (Association of Arctic Expedition Cruise Operations)
Capt. Leif Skog (Lindblad-National Geographic Expeditions)
14:15 Arctic peoples perspectives
Hon. Sara Olsvig (Greenland Parliament and Danish Parliament)
14:30 Panel and open discussions – Key issues
15:15 Coffee

Operationalizing the Polar Code in the Arctic Ocean

- 15:45 Sustaining Arctic observing networks
Prof. Jean Claude Gascard (Université Pierre et Marie Curie)
16:00 Insurance industry contributions
Mr. Michael Kingston (Marine, Trade & Energy Group, DWF LLP)
16:15 Arctic marine navigation and charts
Mr. Evert Flier (Norwegian Hydrographic Service)
16:30 Institutional interplay in the Arctic Ocean
Prof. Oran Young (University of California Santa Barbara)
16:45 Panel and open discussions – Summary of key issues
17:45 Conclude

ANNEX 2

WORKSHOP PARTICIPANTS

LIST OF PARTICIPANTS

Workshop on Safe Ship Operations in the Arctic Ocean (28 February 2014)

Title	Name	Job Title	Organization/Company
Ms.	ADAMS Maryanne	Deputy Commissioner of Maritime Affairs	Republic of the Marshall Islands
Mr.	AKHURST John	Deputy Director, Maritime Affairs	Bahamas Maritime Authority
Dr.	ALDWINCKLE David	Member RINA IMO Committee	The Royal Institution of Naval Architects (RINA)
R. Adm.	ALIPERTA Cristiano	Alternate Permanent Representative to IMO	Embassy of Italy
Mr.	ALLEN Ronnie	Principal Policy Lead - Marine Technology	Maritime and Coastguard Agency - United Kingdom
Mr.	ANZÉN Mikael	Deputy Director	Ministry of Foreign Affairs - Sweden
Mr.	APPLETON David	Professional & Technical Assistant	IFSMA - International Federation of Shipmasters' Association
Mr.	ASCH Kenneth	Freelance	BBC Radio 4
Dr.	BENN Angela	Arctic Governance Analyst -ACCESS Project	National Oceanography Centre
Dr.	BERKMAN Paul Arthur	Furlbright Distinguished Scholar and Research Professor	Bren School of Environmental Science and Management - Marine Science Institute
Mr.	BOND James	Director, Shared Technology	ABS - United States (representing IACS)
Ms.	BOURA Panagiota	Lt. Cdr. (H.C.G)	Embassy of Greece
Dr.	BRIGHAM Lawson W.	Distinguished Professor of Geography & Arctic Policy	University of Alaska Fairbanks
Dr.	CHIRICO Vito	Permanent Representation to the IMO	Embassy of Italy
Mr.	CHO Seung Hwan	Minister Counsellor	Embassy of the Republic of Korea
Mr.	COBOS Ismael	Counselor for Transport	Embassy of Spain
Mr.	CURRY Robert	Hull structures expert	The Royal Institution of Naval Architects (RINA)
Mr.	DA SILVA Niklas	Desk Officer	Ministry of Enterprise, Energy and Communication (Division of Transport) Sweden
Mr.	DEKNOPPER Wouter	Executive Director, Europe, Middle East, Africa & Russia	Iridium
Ms.	DE SOOMER Elle	Legal Advisor	Royal Belgian Shipowners' Association
Capt.	DICKINSON John	Head of Delegation	The Nautical Institute - Canada
Ms.	DORMON Joanna	Policy Lead	MCA (UK Administration)
Mr.	DURBAZEVS Arie	Technical Compliance Officer	Bahamas Maritime Authority

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Title	Name	Job Title	Organization/Company
Capt.	ENRIQUEZ Nimrod	Technical Edviser	Office of the Coastguard Attaché - Embassy of the Philippines
Mr.	EVANS Alan	Marine Geoscientist	National Oceanography Centre, Southampton
Mr.	FARINÓN Mario	Technical Adviser of Argentina to IMO	Embassy of Argentina
Mr.	FLIER Evert	Director	Norwegian Hydrographic Service
Mr.	FRIAS Juan Carlos	Captain - Argentine Navy	Embassy of Argentina
Ms.	GAALAAS Siv Christin	Speciality Director	Norwegian Ministry of Trade, Industry and Fisheries
Capt.	GALE Harry	Technical Manager	The Nautical Institute - Canada
Prof.	GASCARD Jean Claude		Université Pierre et Marie Curie
Dr.	GULLO Peter	Deputy Permanent Representative of Germany to the IMO	Embassy of the Federal Republic of Germany
Mr.	GUPTA Anuj	Adviser	Oil Companies Int. Marine Forum (OCIMF)
Mr.	GUREL Oguzhan	Senior Lecturer	Istanbul Technical University Maritime Faculty
Amb.	HALINEN Hannu	Ambassador, Arctic Affairs - Senior Arctic Official at the Arctic Council	Ministry of Foreign Affairs of Finland
Dr.	HAMBROOK BERKMAN Julie A.	Managing Director	Foundation for the Good Governance of International Spaces
Ms.	HAMMER Helle	Chairman	IUMI Political Forum (International Union of Marine Insurance)
Mr.	HAN Gil-Yong	General Manager	Korean Register of Shipping
Capt.	HASSING Sibrand	Director	Nautical Operations Europe - The Netherlands
Mr.	HENRIKSEN Nils-Arild	Representative	ILAMA - International Life- Saving Appliance Manufacturers' Association
Mr.	HULL Alistair	Technical Manager	International Chamber of Shipping
Mr.	HUNTER Kevin	International Relations Manager (Technical)	Maritime and Coastguard Agency - United Kingdom
Mr.	JOHNSEN Gudfinnur G.	Technical Adviser	Federation of Icelandic Fishing Vessel Owners
Ms.	JØRGENSEN Frigg	Executive Director	AECO - Association of Arctic Exp. Cruise Operators - Norway

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Title	Name	Job Title	Organization/Company
Capt.	KANAFANI Mustafa	Representative to IMO	Syrian Arab Republic
Ms.	KAYA Senay	Legal Advisor	Turkish Naval Forces Command
Mr.	KEANE Timothy	Senior Manager, Arctic Operations and Projects	Fednav Limited - Canada
Dr.	KEIL Kathrin	Project Scientist	Institute for Advance Sustainability Studies (ASS), The Arctic Institute - Germany
Mr.	KINGSTON Michael		Marine, Trade & Energy Group, DWF LLP
Ms.	KNUDSEN Helle	Special Advisor to the IMO	Danish Maritime Authority
Mr.	KOCA Murat	Director, Law of the Sea and Maritime Affairs Branch	Turkish Naval Forces Command
Ms.	KOCK Hetty T M	Senior Policy Advisor	Ministry of Infrastructure and the Environment - Netherlands
Mr.	KUDINOVICH Igor	Head of Department	Krylov State Research Centre
Ms.	LAGNADO Alice	Features Editor	Voice of Russian radio
Mr.	LANGE Lars	Secretary-General	IUMI - International Union of Marine Insurance - Germany
Mr.	LEE Si Won	Liasion Officer of the Republic of Korea to the IMO	Ministry of Oceans and Fisheries of the Republic of Korea
Mr.	LONGUÈVE Gilles	President	Maritime Passive Safety Association - France
Ms.	LOORENTS Nele	Student	Royal College of Defence Studies
Mr.	MASON Richard	Accredited Representative of the European Commission to the IMO	European Commission
Dr.	MAZANY Leigh	Canada's representative to IMO	Transport Canada
Mr.	MACLOED Kenneth	President	UK Chamber of Shipping
Mr.	MEIER Petter	Deputy Director General	Ministry of Transport and Communication - Norway
Mr.	MELENAS Yuri		Mission of the Russian Federation to IMO
Mr.	MUNDIN Adrian	Nautical Policy Lead	UK Chamber of Shipping
Mr.	NÚÑEZ Miguel	Maritime Affairs Attaché	Embassy of Spain
Ms.	OLSEN Anne-Katrine	Administrative Officer	Inuit Ataqatigiit - Denmark
Amb.	OLSVIG Sara	Member of Danish and Greenlandic Parliaments	Inuit Ataqatigiit - Denmark

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Title	Name	Job Title	Organization/Company
Dr.	ÖREK Hasan	Dr.	Middle East Technical Univ. Inst. Of Marine Sciences - Turkey
Dr.	ÖZSOY-ÇİÇEK Burcu	Assistant Prof. - MaRS (Mari(time)(ne) Remote Sensing) Lab. Director	Maritime Faculty - University of Istanbul
Mr.	PETERSEN Mads Boye	Managing Director / Partner	Nordic Bulk Carriers A/S - Denmark
Dr.	PARSON Lindsay	Director	Maritime Zone Solutions Limited
Capt.	PATRIMONIO Robert	Maritime Attaché	Office of the Coastguard Attaché - Embassy of the Philippines
Ms.	PRIETO Susana	Legal Assistant	Embassy of Spain
Mr.	RATTAN Mohinder	Marine Superintendent	BP Shipping
Mr.	REED Ian	Adviser	Oil Companies Int. Marine Forum (OCIMF)
Mr.	ROGERS Roland	Representative - IMarEST	IMarEST
Mr.	SADLER Paul	Accredited Permanent Representative to IMO	IACS Permanent Secretariat
Dr.	SCHWARZ, Joachim	Arctic Consultant	JSC
Mr.	SERRES Nicolas	Communications	Maritime Passive Safety Association - France
Mr.	SETTERBERG Per	Project Manager MICE (MonalisaICE)	Swedish Maritime Administration
Mr.	SHETTY Raj	Senior Advisor	Oil Companies Int. Marine Forum (OCIMF)
Mr.	SHIELDS Ian	Technical Adviser (Nautical)	Oil Companies Int. Marine Forum (OCIMF)
Capt.	SKOG Leif	Vice President of Marine Operations	Lindblad Expeditions
Mr.	SLIESTER Randolph	Ship Programme and Operations Manager	British Antarctic Survey
Capt.	SNIDER David	Vice President	The Nautical Institute - Canada
Mr.	SPENCE Brad	Marine Policy and Standards Officer	Transport Canada
Mr.	STANSFIELD Paul	Desk Officer (Arctic), Polar Regions Department	Foreign and Commonwealth Office
Mrs.	STEMRE Turid	Senior Adviser	Norwegian Maritime Authority
Ms.	SUTEEVA Adelina	Leading Engineer	Krylov State Research Centre
Mrs.	TIEMENS-IDZINGA Marja C.	Senior Policy Adviser/IMO Coordination	Ministry of Infrastructure and the Environment - Netherlands
Mr.	TONGUE David	Director Regulatory Affairs	International Chamber of Shipping (ICS)

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Title	Name	Job Title	Organization/Company
Mr.	TURNER Phillip John	Graduate Researcher	National Oceanography Centre - United Kingdom
Dr.	VANDERZWAAG David	Professor of Law	Marine & Environmental Law Institute - Canada
Mr.	YILMAZ Fatih	Technical Officer	Ministry of Transport - Turkey
Prof.	YOUNG Oran R.	Research Professor	Bren School of Environmental Science and Management - University of California
Prof.	WADHAMS Peter		University of Cambridge

ANNEX 3

WORKSHOP OPENING SPEECH BY THE IMO SECRETARY-GENERAL

ORGANISATION
MARITIME
INTERNATIONALE



INTERNATIONAL
MARITIME
ORGANIZATION

ORGANIZACIÓN
MARÍTIMA
INTERNACIONAL

IMO Polar Workshop

28 February 2014

Opening remarks

By Koji Sekimizu

Secretary-General, International Maritime Organization

Excellencies, distinguished participants, ladies and gentlemen,

It is a great pleasure for me to welcome you all to this workshop, bringing together scientists, regulators and industry to consider issues and strategies for ensuring safe ship operations in the Arctic Ocean. As you are all well aware, the anticipated exchange of information is particularly significant in view of the on-going work of this Organization on the development of a mandatory international code for ships operating in polar waters, the polar code in short, which will cover the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to ships operating in the inhospitable and environmentally sensitive waters surrounding the two poles. I am pleased that the Organization serves as the host for this special event, providing us with an opportunity to listen to the views of the scientific community, as a supplement to our usual gatherings of representatives of maritime administrations and the shipping industry.

The safety of ships operating in the harsh, remote and vulnerable polar areas and the protection of the pristine environments around the two poles have always been a matter of concern for IMO and many relevant requirements, provisions and recommendations have been developed over the years. Trends and forecasts indicate that polar shipping will grow in volume and diversify in nature over the coming years and these challenges need to be met without compromising either safety of life at sea or the polar environments.

Ships operating in the Arctic and Antarctic environments are exposed to a number of unique risks. The relative lack of good charts, communication systems and other navigational aids pose challenges for mariners. The remoteness of the areas makes rescue or clean-up operations difficult and costly. Cold temperatures may reduce the effectiveness of numerous components of the ship, ranging from deck machinery and emergency equipment to sea suction. When ice is present, it can impose additional loads on the hull, propulsion system and appendages.

Some of you may be aware that I have been able to observe, at first hand, during 2013, the weather and sea conditions in the polar areas and experienced for myself ice-breaking activities

and navigation in the Arctic Ocean with full support of the Russian Federation. I also visited Antarctica, thanks to the hospitality of the Government of Chile, in December 2012. These visits reinforced my view that we all must work together to make ship operations around the poles safe, environmentally sound and sustainable.

A universally accepted regulatory framework is essential for sustainable development in shipping – and the world looks to IMO to provide that framework. IMO measures are designed, among other things, to promote safety, to protect the environment, to improve efficiency and to ensure a properly trained workforce.

There are already a number of measures in place or under development that specifically address operations in polar regions. In March 2012, for example, a timetable for bringing the Global Maritime Distress and Safety System up to date was agreed by the COMSAR Sub-Committee.

The review of the GMDSS will look specifically into the communication requirements for the polar areas, including the use of more modern communication technologies, in recognition of the unique challenges of search and rescue in remote areas.

And, to better reflect the need for navigational and meteorological information and to identify the responsibilities of coastal State providers in the region, the provision of Maritime Safety Information has been updated for the Arctic, including the creation of new NAVAREAs and METAREAs up to 90 degrees north.

IMO has also adopted important guidelines for ships operating in remote areas, such as the 2006 Guide for Cold Water Survival and the 2007 Guidelines on Voyage Planning for Passenger Ships Operating in Remote Areas.

Moreover, recent amendments to the Convention on Standards for Training Certification and Watchkeeping (STCW) provide for new training guidance for personnel serving on board ships operating in polar waters.

But the most important initiative for the development of appropriate safety and environmental regulation for Arctic shipping at IMO is the development of the mandatory polar code. The move to develop the polar code followed the adoption in 2009 of Guidelines for ships operating in polar waters, which sets out additional provisions deemed necessary for the polar areas beyond the requirements of existing conventions. But, whereas the Guidelines are recommendatory, the IMO membership has agreed that the polar code would be a mandatory instrument, setting out internationally binding requirements appropriate for the severe environmental conditions of the

polar areas, over and above those already contained in existing instruments, such as the SOLAS and MARPOL Conventions.

Work to finalize the code at the end of this year is well underway, with IMO's committees and sub-committees making special efforts to ensure the completion date is adhered to. The Marine Environment Protection Committee and the Maritime Safety Committee, meeting during March/April and May, respectively, will make maximum resources available to resolve the remaining issues, based on the contributions of the sub-committees on ship design and construction, on the human element, training and watchkeeping and on ship systems and equipment, all of which have been tasked with the completion of relevant parts of the code falling under their remit.

During this workshop, two pertinent current projects, funded by the National Science Foundation of the United States and the European Commission, respectively, will present the latest results of their research and we all look forward to hearing about:

- the project Holistic integration for Arctic coastal-marine sustainability, with the objective of developing and demonstrating an international, interdisciplinary and inclusive process to enhance the practice of governance and sustainability in Arctic coastal-marine systems; and
- the project Arctic Climate Change, Economy and Society, with the objective of assessing climatic change impacts on marine transportation, including tourism, fisheries, marine mammals and the extraction of oil and gas in the Arctic Ocean.

The presentations on the two projects will be supplemented by contributions from eminent speakers, covering a wide range of subjects such as the polar code; the work of the Arctic Council; the Northern Sea Route; sea-ice trends; Arctic Ocean economics, including commercial shipping and shipborne tourism; Arctic peoples perspectives; insurance issues; marine navigation and charts; and institutional interplay. I am sure that all this will provide a large amount of food for thought which in turn will hopefully make for spirited and interesting panel discussions.

This workshop is an opportunity to open our doors to others who are not usually part of the regulatory process at IMO, enabling all of us to take a fresh look at wider perspectives and different horizons and consider issues that may not be listed on the current work programme of the Organization. I feel sure that the collective expertise of the experts gathered here today will make this event stimulating, lively and thought-provoking.

Thank you.
