barbados maritime

INFORMATION BULLETIN No.276

International Code for Ships Operating in Polar Waters

Guidance and instructions for Barbados Recognised Organisations, Barbados Approved Nautical Inspectors, Ship Owners, Managers and Masters

1. General

1.1. The purpose of this Bulletin is to provide guidance on the requirements for ships entering Arctic or Antarctic waters under the provisions of Chapter XIV of the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS), titled "Safety Measures for Ships Operating in Polar Waters", which was adopted by the International Maritime Organization (IMO) by Resolution MSC.386 (94) on 21 November 2014.

1.2. Chapter XIV introduces the International Code for Ships Operating in Polar Waters (Polar Code), which was adopted by IMO under Resolutions MSC.385 (94) on 21 November 2014 and MEPC.264 (68) on 15 May 2015.

1.3. This Bulletin should be read in conjunction with the Polar Code and Circular MSC.1/Circ.1519 Guidance on methodologies for assessing operational capabilities and limitations in ice.

1.4. Classification requirements for ships assigned with Polar Class (Ice Class) have been published by the International Association of Classification Societies (IACS) and can be found in IACS Unified Requirement I.

2. Application

2.1. This Bulletin applies to all ships registered in Barbados that intend to proceed to Polar Water areas.

2.2. The SOLAS related requirements of the Polar Code entered into force on 1 January 2017 for new ships and will enter into force from 1 January 2018 for existing ships. The MARPOL related requirements of the Polar Code also entered into force on 1 January 2017.

2.3. SOLAS Chapter XIV applies to all ships engaged on international voyages and certificated in accordance to SOLAS Chapter I, Reg.12.

2.4. New environmental protection requirements apply to all ships whilst in Polar Waters. Full details are provided in MEPC.265 (68).

'New ship' means a ship, the keel of which is laid or which is at a similar stage of construction, on or after 1 January 2017

2.5. The Polar Code requirements apply in Polar Waters regardless of whether a ship is proceeding to a destination within Polar Waters or transiting through Polar Waters to a destination outside.

2.6. The Polar Code applies to ships either specifically built for operations in ice and at extreme low temperatures and to those ships that previously were not required to undergo any specific verification prior to sailing in Polar Waters as defined in paragraph 3 below.

2.7. The Polar Code requirements apply to ships operating in Polar Waters irrespective of the season.

3. Structure of the Polar Code

3.1. In accordance with Regulation 1.4 of SOLAS Chapter XIV, Polar Waters are defined as "Arctic waters and/or the Antarctic area".

3.1.1. Regulation 1.3 defines Arctic waters as "…those waters which are located north of a line from the latitude 58°00N and longitude 042°00W to latitude 64°37N, longitude 035°27W and thence by a rhumb line to latitude 67°03.9N, longitude 026°33.4W and thence by a rhumb line to the latitude 70°49.56N and longitude 008°59.61W (Sørkapp, Jan Mayen) and by the southern shore of Jan Mayen to 73°31.6N and 019°01E by the Island of Bjørnøya, and thence by a great circle line to the latitude 68°38.29N and longitude 043°23.08E (Cap Kanin Nos) and hence 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 Il'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 056°37.1W and thence to the latitude 58°00N, longitude 00°42W

3.1.2. Regulation 1.2 defines Antarctic waters as "…the sea area south of latitude 60°S.

3.2. A concise overview of the new requirements has been published by the IMO in the form of infographics, which may be viewed on the IMO website.

3.3. The Polar Code consists of Part A (mandatory requirements) and Part B (guidance). Part I-A addresses safety related measures and Part II-A outlines pollution prevention requirements.

3.4. Non-mandatory Part I-B and Part II-B provide guidance on implementation of the requirements listed in Parts I-A and II-A respectively, and should be taken into consideration when preparing a Polar Waters Operation Manual (PWOM).

4. Operations in Polar Waters

4.1. The pattern of summer navigation through northern sea areas such as Russian Northern Sea Route, North-West Passage in Canada, around the southern tip of Iceland, in Hudson Bay and around Alaska was traditionally considered as not imposing any specific demands on non-ice-strengthened ships, beyond those already addressed by the existing Conventions. Introduction of the Polar Code will impose additional challenges in verifying ships' compliance with the new requirements.

4.2. Barbados Maritime recommends that owners and operators of Barbados registered ships that are likely to sail to Polar Waters allow ample time to prepare the ship for such voyages.

4.3. Ships operating in Polar Waters are required to be assessed for operational limitations, hold a Polar Waters Operation Manual (PWOM) and then be surveyed and issued with a Polar Ship Certificate. Polar Ship Certificates for ships registered in Barbados are to be issued by the Barbados Recognised Organisation that classes the ship.

4.4. Early discussion with the Recognised Organisation and preparation of a comprehensive PWOM, covering specific sailing areas where the ship is likely to operate (also accounting for any seasonal variations), will help facilitate issuance of a Polar Ship Certificate, particularly when such certification may be required at short notice.

4.5. It is expected that Port State Control (PSC) regimes will verify the availability of Polar Ship Certificates on board ships transiting through Polar Waters regardless of whether the port of origin and/or destination may be located outside of Polar Waters.

4.6. It is also expected that PSC will verify the availability of Polar Ship Certificates on board ships that have arrived at their ports from within Polar Waters, or whose destination is within Polar Waters.

5. Polar Code – main points

5.1. The scope of application of the Polar Code requirements is dependent on the design features of the ship. For the application of Polar Code requirements, ships are sub-divided into three categories as follows:

- **Category A** ship means a ship designed for operation in Polar Waters in at least medium first-year ice, which may include old ice inclusions, e.g. ships with a higher degree of ice-strengthening of the hull; or

- **Category B** ship means a ship not included in category A, designed for operation in Polar Waters in at least thin first-year ice, which may include old ice inclusions, e.g. ships with a medium ice-strengthening of the hull; or • Category C ship means a ship designed to operate in open water or in ice conditions less severe than those included in categories A and B, e.g. ships with none or optional minimal ice-strengthening of the hull.

- **Category C** ship means a ship designed to operate in open water or in ice conditions less severe than those included in categories A and B, e.g. ships with none or optional minimal ice-strengthening of the hull

5.2. The essential new requirements can be summarised as follows:

i. All ships operating in Polar Waters will have to be certificated in accordance with paragraph 1.3 of Part 1-A of the Polar Code. The Polar Ship Certificate shall be issued after a successful initial or renewal survey to verify compliance with the applicable Polar Code requirements and shall be harmonised with the ship's other SOLAS certificates;
ii. Where the operational assessment of a Category C ship indicates that no additional equipment nor structural modification is required to demonstrate compliance with the Polar Code for the intended voyage to Polar Waters, the Polar Ship Certificate can be issued administratively, based on document verification. In this case the validity of the Polar Ship Certificate shall be confirmed at next scheduled SOLAS-related survey. The document verification referenced in the above shall be completed by the Barbados Recognised Organisation that classes the ship (for dual Class ships, the Recognised Organisation that issues the statutory certificates);
iii All ships operating in Polar Waters shall carry a Polar Waters Operation Manual (PWOM). The PWOM shall include risk assessments, main procedures and operational measures devised for Polar Water operations as addressed in Chapter 2 of the Polar Code;
iv. All ships operating in Polar Waters will require to be manned by an adequately trained crew;
v. Provisions for additional LSA and "winterisation" of existing safety equipment on board;
vi. Specific new requirements related to oily mixtures and sewage discharges, garbage handling and emission regulations, as required under the International Convention for the Prevention of Pollution from Ships 1973, as amended (MARPOL), adopted by IMO through Resolution MEPC.265(68);
vii. Provision of additional navigation equipment beyond the requirements of Regulation 19 of SOLAS Chapter V, e.g. ships will need to have at least two non-magnetic means to determine and display their heading, provision of two or more echo-sounding transducers for ice-strengthened ships, GNSS compass for ships intended to proceed to areas above 80° latitude;
viii. Additional stability and subdivision requirements applicable to new ships are addressed in Chapter 4 of the Polar Code. New ships of Category A and B shall have sufficient residual stability at all loading conditions to sustain ice-related damages.
ix. Where a ship is intended to operate in conditions prone to ice accretion specific measures minimising ice accretion must be introduced. The effect of ice accretion on the stability of the ship should be included in the PWOM as well as measures to de-ice the ship structure and fittings.

5.3. Key parameters defining the ship's ability to navigate in Polar Waters shall be addressed via operational limitations. The operational limitations will be listed in the Polar Ship Certificate.

5.4. Operational limitations as addressed in Paragraph 1.5 of Part 1-A of the Polar Code will need to be determined individually for each ship intended to operate in Polar Waters, taking into account any existing ice-strengthening measures (including assigned ice-class, if any), anticipated ice conditions and operation in low air temperatures in the area of intended operations in Polar Waters.

5.5. Any restrictions that may be applied to a ship through Coastal State regulations in the area where the ship intends to operate shall apply concurrently with the Polar Code and should not form a part of the operational limitations.

5.6. IMO has introduced an assessment methodology approach called Polar Operational Limit Assessment Risk Indexing System (POLARIS), details of which can be found in the Appendix to circular MSC.1/Circ.1519.

5.7. Utilisation of POLARIS will provide a method of assessing operational limitations and ship's capabilities in ice, referenced to IACS Polar Class commonly used by Classification Societies for ice-strengthened ship design.

5.8. Barbados Maritime acknowledges a multitude of existing ice-strengthened ships currently operating globally have been designed to other requirements, such as Finnish-Swedish Ice Class Rules or Russian Ice Categories. The categorisation of ship ice-strengthening measures within the Polar Code however refers to IACS Polar Class ice classes. The owners of any ship designed to such other requirements shall, in cooperation with the Classification Society, develop an approach to provide a clear cross reference of operational limitations at least equivalent to that outlined in MSC.1/Circ.1519. Guidance for determining equivalent ice class is included in Paragraph 4 of Part 1-B of the Polar Code.

5.9. Barbados Maritime accepts other methods or approaches to drafting operational limitations for a ship intended to operate in ice, such as Canadian Arctic Ice.

6. Life-Saving Appliances

6.1. Life-saving appliances and associated equipment and resources shall be provided in such a manner and in sufficient quantities to effectively allow evacuation of all persons from the ship and support survival for the duration of the maximum expected rescue time.

6.2. Provisions for abandoning the ship shall cover the possibility of evacuation to water, ice or land.

6.3. The maximum expected rescue time shall be not less than 5 days. For operations in remote areas of the Arctic and Antarctica the expected rescue time may constitute a significant period due to scarce Search and Rescue (SAR) coverage. In exceptional cases Barbados Maritime may accept maximum rescue time of less than 5 days where a ship has been certificated to operate solely in areas where prompt SAR assistance is available.

6.4. Any requests for acceptance of shorter maximum rescue time shall be submitted by the Recognised Organisation on behalf of the operator.

7. Operations in Low Temperatures and in Ice

7.1. Where the ship is intended to operate in low temperatures it must be demonstrated that the design and operational capabilities of the structure and equipment are adequate for the conditions likely to be encountered.

7.2. The Polar Code introduces Mean Daily Low Temperature (MDLT)5 and Polar Service Temperature (PST)6 .

7.3. The value of MDLT shall be based on an observation data set from the area where the ship intends to operate, which covers at least 10 years of temperature observation. PST is set at least 100C below the lowest MDLT for the intended area and season.

7.4 Barbados Maritime recognises that obtaining a reliable 10 years' observation temperature data set for certain localities within the Arctic and Antarctic may prove to be difficult. In such situations, Barbados Maritime may accept shorter temperature observation data sets that may be available through local authorities, operators stationed in these areas or recognised scientific institutions.

7.5. When a ship operating pattern is such as to require entry into Polar Waters at irregular intervals, during different seasons and in various locations the value of MDLT/PST shall cover all expected operational conditions likely to be encountered. Barbados Maritime recommends selection of the lowest expected MDLT/PST value that may be reasonably supported by the design and features of an individual ship.

7.6. The PWOM shall include procedures and arrangements for maintaining life support and integrity of an ice-strengthened ship in the event of prolonged entrapment by ice. Prolonged entrapment by ice shall be taken as a period of time longer than the time required for the ship to navigate at safe speed from the entrapment location to the nearest port or point where assistance can be rendered.

8. STCW and Crew Training Requirements

8.1. Specific polar operations training is considered mandatory for the Master and navigational watch officers, as outlined in Chapter 12 of the Polar Code. New training requirements have been addressed in the International Convention on Standards of Training and Certification for Watchkeepers (STCW) 1978, as amended, through IMO Resolutions MSC.416 (97) and MSC.417 (97).

8.2. Pursuant to the conditions outlined in paragraph 12.3.2 of Part 1-A of the Polar Code, Barbados Maritime allows the use of navigational personnel other than the ship's crew, i.e. so-called "Ice Pilots".

9. MARPOL Annex I – Discharges and Structural Requirements

9.1. In accordance with paragraph 1.1.1 of Part II-A of the Polar Code, discharge to sea of oil or oily mixtures in Arctic waters is prohibited.

9.2. Operation in Polar Waters shall be taken into account, as appropriate, in the Oil Record Books, the PWOM and the shipboard oil pollution emergency plan or the shipboard marine pollution emergency plan as required by MARPOL Annex I.

9.3. Existing ships of Category A (i.e. constructed before 01 January 2017) that cannot comply with paragraph 1.1.1 of Part II-A of the Polar Code, and which operate in Arctic waters continuously for over 30 days, shall comply with the provisions of Regulation 15.3 of MARPOL Annex I, until the first intermediate or renewal survey of the Polar Ship Certificate, whichever comes first, after 1 January 2018.

9.4. The following requirements apply to new ships of Category A and B:

i. on ships with aggregate oil fuel capacity of less than 600m^3 all oil fuel tanks with individual capacity greater than 30m^3 shall be separated from the outside shell by a distance of not less than 0.76m;
ii. all oil residues (sludge) and bilge water tanks with individual capacity greater than 30m^3 shall be separated from the outside shell by a distance of not less than 76m;
iii. oil tankers of less than 5,000 tonnes deadweight shall have the entire cargo tank length protected with double bottom and wing tanks or void spaces complying with the requirements of Regulation 19 of MARPOL Annex I;
iv. on ships other than oil tankers, all cargo tanks intended for the carriage of oil shall be separated from the outside shell by a distance of not less than 0.76m.

10. MARPOL Annex II – Discharges and Structural Requirements

10.1. In accordance with paragraph 2.1.1 of Part II-A of the Polar Code, any discharge into the sea in Arctic waters of noxious liquid substances, or mixtures containing such substances, is prohibited.

10.2. Operation in Polar Waters shall be taken into account, as appropriate, in the Cargo Record Book, the PWOM and the shipboard marine pollution emergency plan for noxious liquid substances or the shipboard marine pollution emergency plan as required by MARPOL Annex II.

10.3. Barbados Maritime approval and specific addendum to Certificate of Fitness are required for any new ship of Cat A and B fitted with cargo tanks of type 3 which is intended to carry in bulk NLS listed in ch.17 column e, as ship type 3, or identified as NLS in ch.18, of the IBC Code.

10.4. For category A and B ships constructed on or after 1 January 2017, the carriage of NLS identified in chapter 17, column e, as ship type 3 or identified as NLS in chapter 18 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk in cargo tanks of type 3 ships shall be subject to the approval of Barbados Maritime. The results shall be reflected on the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk or Certificate of Fitness identifying the operation in Polar Waters.

11. MARPOL Annex IV – Discharges

11.1. Discharges of sewage within Polar Waters are prohibited except when performed in accordance with MARPOL Annex IV and the following requirements:
i. the ship is discharging comminuted and disinfected sewage in accordance with Regulation 11.1.1 of MARPOL Annex IV at a distance of more than 3 nautical miles from any ice-shelf or fast ice and shall be as far as practicable from areas of ice concentration exceeding 1/10; or
ii. the ship is discharging sewage that is not comminuted or disinfected in accordance with Regulation 11.1.1 of MARPOL Annex IV and at a distance of more than 12 nautical miles from any ice-shelf or fast ice and shall be as far as practicable from areas of ice concentration exceeding 1/10; or

iii. the ship has in operation an approved sewage treatment plant meeting the operational requirements in either Regulation 9.1.1 or 9.2.1 of MARPOL Annex IV, and discharges sewage in accordance with Regulation 11.1.2 of Annex IV and shall be as far as practicable from the nearest land, any ice-shelf, fast ice or areas of ice concentration exceeding 1/10.

11.2. Discharge of sewage into the sea is prohibited from category A and B ships constructed on or after 1 January 2017 and all passenger ships constructed on or after 1 January 2017, except when such discharges are in compliance with paragraph iii.

11.3. Notwithstanding the requirements of paragraph 11.1, category A and B ships that operate in areas of ice concentrations exceeding 1/10 for extended periods of time, may only discharge sewage using an approved sewage treatment plant meeting the operational requirements in either Regulation 9.1.1 or 9.2.1 of MARPOL Annex IV. Such discharges shall be subject to the approval of Barbados Maritime.

12. MARPOL Annex V – Discharges, Garbage Management Plan and Placards

12.1. In Arctic waters, discharge of garbage into the sea permitted in accordance with Regulation 4 of MARPOL Annex V shall meet the additional requirements specified in paragraph 5.2.1 of Part II-A of the Polar Code.

12.2. In the Antarctic area, discharge of garbage into the sea permitted in accordance with Regulation 6 of MARPOL Annex V, shall meet the additional requirements specified in paragraph 5.2.2 of Part II-A of the Polar Code.

12.3. Operation in Polar Waters shall be taken into account, as appropriate, in the Garbage Record Book, Garbage Management Plan required under Regulation 10 of MARPOL Annex V, and the related placards. Specifically, the ship's Garbage Management Plan shall refer to the requirements of paragraph 5.2 of Part II-A of the Polar Code for ships intended to operate in Polar Waters.

12.4. MARPOL Annex V was amended by MEPC.265 (68), which entered into force on 01 January 2017. The amendments include changes to the heading of paragraph 4.1.3 of the Garbage Record Book to reflect a new reference to Chapter 5 of Part II-A of the Polar Code.

12.5. Further extensive changes to the format of the Garbage Record Book were adopted by IMO in November 2016 through MEPC.277 (70) and the new format is to be used from 1 March 2018. New Garbage Record Books meeting the new format will be made available by Barbados Maritime.

12.6. In the meantime, the existing Garbage Record Books issued by Barbados Maritime may continue to be used provided that the instructions in Barbados Information Bulletin no. 277 are followed.

7th August 2017