IUMI Position Paper
Arctic sailings

1. Introduction

Following the transit of the first Western owned vessels through the Northern Sea Route (NSR) in 2009, through-traffic increased up until 2016 but then plummeted. Declining freight markets and fuel costs, difficult ice conditions, and scarcity of commercial ice-strengthened vessels, markedly reduced the economic value of the time saved by using the shorter sea route. Cargo volumes picked up again in 2017 with an increase of nearly 40%, although from a small number[1].

Destination traffic in the area almost quadrupled from 2013 to 2017. This was mainly due to the Sabetta liquid natural gas (LNG) facility on the Yamal Peninsula. In August 2017, the first of fifteen ice-strengthened vessels being built for this purpose set out to demonstrate its ability by travelling through the Northern Sea Route in record speed and for the first time without icebreaker escort.

Transits have also been made through the Northwest Passage, with one of the most notable being the cruise vessel Crystal Serenity in 2016. Within the cruise industry, today's focus is more on expedition cruises with smaller custom-built vessels destined for Arctic waters to offer guests a more "intimate experience". Several of these vessels are now on order.

With changing ice conditions potentially opening the high Arctic as a trade route, a gradual increase in the volume of Arctic shipping can be expected, particularly for destination traffic in connection to energy, fisheries and tourism.

2. Polar Code

The International Code for Ships Operating in Polar Waters[2] (Polar Code) covers the full range of design, construction, operation, training, search and rescue and environmental protection relevant to vessels operating in the inhospitable waters surrounding the two poles.

Under the Polar Code, vessels intending to operate in the defined waters must apply for a Polar Ship Certificate following an assessment of the vessel's operational limitations with plans and procedures on how to mitigate incidents. It is also mandatory to carry a Polar Water Operational Manual (PWOM), intended to support

[1] Close to 10 million tonnes in 2017
[2] http://www.imo.org/en/MediaCentre/HotTopics/polar/Pages/default.aspx

the decision-making process. Masters, chief mates and officers in charge of a navigational watch shall be qualified in accordance with the STCW Convention[3].

The Polar Code and the associated SOLAS[4] and MARPOL[5] amendments entered into force 1 January 2017. Training requirements became mandatory from 1 July 2018.

IUMI has been an active supporter of the Polar Code, which lowers the risks by making owners better prepared and prevents transits that do not meet the safety standards for operating in the Arctic. A vessel found to be in breach of these standards, may also find itself without insurance cover if there is a claim.

The safety part of the Polar Code applies to ships certified under SOLAS, i.e. cargo ships of 500 GT or more and all passenger ships. Discussions continue at the International Maritime Organization (IMO) on additional requirements for non-SOLAS vessels (fishing vessels, pleasure yachts above 300 gross tonnage and cargo ships between 300 and 500 gross tonnage). IUMI supports these efforts to ensure there is a safer regime also for these vessels also.

The Polar Code is goal-based, often providing only functional requirements without specific details on how to achieve these goals. To advise shipowners on the development of the PWOM, the International Chamber of Shipping (ICS) and the Oil Companies International Maritime Forum (OCIMF) have undertaken to develop industry guidance for publication in 2019. Individual classification societies also offer guidance on this, and IUMI would hope that owners/operators make use of this guidance when preparing for an Arctic voyage.

IUMI has also participated in developing interim guidance on methodologies for assessing operational capabilities and limitations in ice (POLARIS[6]), which was approved by IMO's Maritime Safety Committee (MSC) in 2016.

3. Risk assessment

It is a well-known fact that the lack of infrastructure and ability to bring the vessel back to a place where repairs can be performed increases the risk of sailing in the Arctic. Even a small engine failure can result in a large claim due to the remoteness of the region. This challenge does not change with the Polar Code.

Harsh and fast-changing conditions with less reliable ice and weather forecasts, restricted visibility up to 90% of the time, insufficient charts based on inadequate and old surveys, unreliable positioning systems and compasses in high latitudes, drifting sea and icebergs, inadequate training of the crew, and limited access to communication links and search and rescue facilities add to this risk.

[3] International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
[4] International Convention for the Safety Of Life At Sea
[5] International Convention for the Prevention of Pollution from Ships
[6] MSC.1/Circ.1519: Guidance on methodologies for assessing operational capabilities and limitations in ice (POLARIS), 6 June 2016

When assessing a risk for insurance coverage, historical loss data is a key factor. Due to a limited number of sailings and trade routes only now freeing up with the changing ice conditions, this information is almost non-existent today. Consequently, insurers are likely to take a cautious approach when assessing the risk of sailings in the Arctic.

In the foreseeable future, marine insurers will continue to assess Arctic voyages on a case-by-case basis, with designated areas remaining either exempt from ordinary insurance cover or conditional as set out in the insurance conditions[7].

A crucial factor in the risk assessment will be the Polar Ship Certificate. This categorises a vessel in accordance with its design and ability to operate in certain polar conditions as provided in the Polar Water Operational Manual. Preparedness and planning are other key elements in the risk assessment.

To address the risks associated with the remoteness and harsh conditions, these are some of the factors to consider and questions to ask from a marine insurer's perspective:

- Vessels
    - Existing vessels (built before 1 January 2017) are exempted from several requirements that must be addressed:
        - Ice damage residual stability
        - Escape routes arrangement for persons wearing "polar clothing"
        - Navigation equipment redundancy (i.e. 2 independent echo-sounding devices)
        - Enclosed bridge wings on ice classed vessels
        - Oil tank separation distance from the side shell
    - Low temperature operations
    - Stability characteristics in ice conditions
    - Navigation in ice conditions

- Infrastructure:
    - Towage/rescue
      Limited rescue capacity (tugs, escort vessels)
        - Is there any capacity available along the route?
        - Rescue can take weeks to arrive; how will the vessel cope with this situation?
    - Place of refuge
      Long distance to nearest available place of refuge with depths (and quays) suitable for the vessel.
        - Where is the nearest option(s) along the route?
    - Spare parts
      Lack of available ports where spare parts may be purchased or delivered.

[7] See for instance the Nordic Marine Insurance Plan, Clause 3-15 Trading areas (http://nordicplan.org/The-Plan/Part-One/Chapter-3/Section-2/#-3-15)

        - Are there any available ports for spare parts along the route?
        - Means of transport to the vessel?
        - Are spare parts carried on board?
    - Salvage
      Long distance to nearest available salvage capacity.
        - Where is the nearest capacity along the route?
        - Are prearrangements considered?

      Difficulty in performing salvage operations due to dark and inhospitable conditions (underwater surveys may be impossible, equipment may not operate, lightering/offloading may not be an option, time pressure due to limited summer months with ice-free waters).
    - Repairs
      Lack of available repair yards with depths and quays suitable for the vessel.
        - Where is the nearest available repair yard?
        - What type of repairs can be carried out on board?
        - Should the engine room be manned 24/7 to avoid a small failure becoming a disaster?
    - Ice breakers
        - Availability?
        - What prearrangements are needed to arrange a tow?

- Ice, weather & oceanography
    - Ice
      Unpredictable and changing ice conditions with floating growlers, icebergs[8] and risk of icing/ice accretion.
        - Are up-to-date information/continuous updates and forecasts available?
        - Is the vessel able to receive this information?
    - Weather
      Visibility restricted up to 90% of the time due to heavy fog in the region, and the weather is unpredictable with heavy storms occurring at any time.
        - Are up-to date forecasts available?
        - How will they be transmitted to the vessel?
    - Oceanography
      Modern charts and hydrographic surveys may be inaccurate and limited in number. Only 5% of the Arctic is mapped to modern standards, and many charts date back to before 1950 with a large margin of error[9].
        - What positioning equipment and charts are carried?
        - How are charts transmitted to the vessel?
        - Is the sea route surveyed satisfactorily?

  Are the following in place: Search lights, forward-looking 3D sonar technology and/or extra officers and lookout on bridge?

[8] Over 1,000 icebergs were reported drifting into North-Atlantic shipping lanes in 2017 (Source: gCaptain)
[9] Charts dating back to before 1950 may incorporate a 25% depth error and a 500-metre positional error.

- Human factor
    - Manning requirement
        - Experience and training of crew?
        - The effect of extended period of daylight and low temperature on crew
        - Need for extra lookout and manning of engine room and/or navigation bridge?
    - Language skills during transits (Northern Sea Route, Northwest Passage, Transpolar Sea route)?
    - Does the owner/operator have any prior experience in the Arctic region?
    - Safety culture of the owner/operator?

- Other example factors:
    - Bunkering arrangements. Quality and behaviour of bunkers and lubricants in low temperatures?
    - Class, including any voluntary notations?

4. Conclusions

With heightened probability and the potentially severe consequences of even small incidents occurring in the harsh Polar environment, insurance will only be available on a case-by-case basis - if at all in certain defined areas of the region. In the coming years, more traffic related to energy, fisheries and destination cruises is to be expected. Over time, this will gradually provide marine insurers with more statistical data to assist in the risk assessment.

Going forward, IUMI;

- Supports the implementation of the Polar Code through further guidance, requirements and performance standards.
- Supports the urgent consideration for an instrument to address non-SOLAS vessels operating in polar waters.
- Strongly encourages an improved infrastructure in Arctic waters to provide necessary rescue capacity and places of refuge.
- Encourages more surveys to produce increasingly reliable charts.
- Participates in the Arctic Shipping Best Practice Information Forum responsible for an information web portal to support implementation of the Polar Code: https://pame.is/arcticshippingforum#part-ia-safety-measures

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About IUMI:

The International Union of Marine Insurance (IUMI) represents 40 national and marine market insurance and reinsurance associations. Operating at the forefront of marine risk, it gives a unified voice to the global marine insurance market through effective representation and lobbying activities. As a forum for the exchange of ideas and best practice, IUMI works to raise standards across the industry and provides opportunities for education and the collection and publication of industry statistics. IUMI is headquartered in Hamburg and traces its roots back to 1874.

More information can be found at www.iumi.com