

CHECK LIST FOR UNDERWRITERS AND OWNERS/MANAGERS FOR ASSESSING RISKS ASSOCIATED WITH VOYAGES IN ARCTIC WATERS

The purpose of this Check List is to heighten awareness of risks for both underwriters and owners/managers. The underwriter should send the Check List to the owner/manager some days prior to the meeting where both parties should go through the list.

Accident scenarios

Prior to going through the Check List, the following accident scenarios for summer trade in the Arctic should be carefully reviewed in order to gain greater understanding of the risks involved.

- One of the most relevant risks is the lack of infrastructure and ability to bring the vessel back to a place where repairs can be performed. There are hardly any suitable ports in West Greenland or in the Northern Sea Route (NSR) where spare parts can be obtained or flown in. As an example it recently transpired that a turbocharger cannot be flown into Nuuk because it exceeds the cargo capacity of a Twin Otter airplane. This means that a minor casualty can become extremely costly. In remote Arctic waters outside the NSR, vessels may be more or less alone and tugboats could use weeks just to get to the distressed vessel.
- (Grounding due to drunken sailor) Excessive cost due to Arctic location.
The Exxon Valdez accident once again? Insurers face many “accidents that “never should have happened. These types of incidents may also occur in the Arctic. In Arctic waters, due to limited Search And Rescue (SAR) resources, we may experience losses of lives, significant oil spill and significant H&M related costs. Evacuations in such waters will always be dangerous, but it is a significant higher danger if evacuated into open lifeboats and assistance is days away. Successful oil spill clean-up may not be possible.
- Holed by ice floes due to too high speed but OK visibility
An incident similar to the “Maxim Gorkij incident” could well be happening again. The vessel hit an ice floe at 17 knots west of Svalbard in 1989. The reason for this high speed is not known, but the visibility was good so some sort of human error was made. The vessel was holed and the captain thought she would sink. 800 passengers and crew were evacuated to ice floes and in open lifeboats. The wave height was three meters and one was afraid that the ice floes would break. The Maxim Gorkij incident had a fortunate outcome due to the Norwegian Coastguard vessel MV Senja being nearby.
- Grounding due to no planned route or deviation from planned route combined with poor sea charts and lack of local knowledge
The ice is melting and there is a perception of ice free areas. Not suited vessels and unprepared crew may enter the area. The sea bed is not fully measured in many places, and the drafts are unreliable. A grounding where the vessel does not get off by own propulsion will represent a major risk to People, Pollution and Property. Some of the areas have good electronic charts whereas others have electronic charts based on very old paper charts. The latter might cause a false impression that the charts are of new date.
- Collision of two vessels on route to Dudinka
With the new agreement between Norway and Russia, a vessel with destination Dudinka might meet more vessels than what has been experienced so far. There is often fog,

sometimes bad weather and no recommended route. On route to Dudinka there will be better possibilities of SAR than to many other Arctic destinations.

- **Grounding due to relying on insufficient navigation means**
If the voyage has a destination north of 70 degrees, it is important to evaluate available navigation support. This will vary largely depending on area visited. In general compasses and gyro compasses will not function north of 70 degrees. GPS might vary in their reliability. Navigation by land might be difficult due to flat landscape perhaps combined with fog.
- **Loss of communication with vessel**
Some Arctic destinations will be outside the Inmarsat Satellites. The need for Iridium communication and LRIT (winterized for winter navigation) should be evaluated. One might risk a vessel being in distress without being able to communicate this to the land organization. The land organization will not be able to find the vessel unless necessary equipment is installed on board.
- **Salvage is delayed due to heavy weather**
Rough weather is frequent in many Arctic destinations. This may prevent a vessel in distress to be salvaged before the claim deteriorates.
- **Grounding in heavy fog**
Heavy fog will be a problem in many Arctic destinations during summer trade, especially in the event of insufficient charts, possibility of meeting incidental ice, perhaps combined with lack of communication.
- **Propeller or rudder damage due to hitting ice**
Manoeuvring a vessel in the ice around Greenland may result in a damaged rudder and/or propeller. The experience of the crew combined with available ice forecasts and route planning will be essential with regard to avoiding the initial incident. An incident may result in stranding and significant loss or costly salvage.
- **Drifting due to minor machinery damage: Blow-by on piston unit on main engine – possible stranding and significant loss**
The outcome of this and of other minor machinery incidents will depend largely on early detection and on the ability/tools and spares to do minor repairs. Remedy could be: New piston with piston rings / disconnect one unit / take me home technology/ two main engines. For arctic voyages it should be evaluated to have the engine room manned 24/7 for early detection and/or action.

Check List:

1. Documental Compliance

- 1.1 Which national regulations apply in the proposed trading area:
 - any forbidden areas due to military regulations or other reasons?
 - any ice class qualifications required by costal states on the route of the voyage?
 - does the ship need any sailing permits?
 - are there pilot or ice pilot requirements?
- 1.2 Does the ship have any conditions of class or class memos?
- 1.3 Safety Management System: Does the ship's SMS have a section for trading in the Arctic or ice congested waters, ref ISM Code 3-2-2?

2. Vessel Suitability

- 2.1 Specify the ship's Ice class – a minimum requirement should be that the ship has sufficient strength, engine power and equipment to operate in Northern Sea Route northern waters such as e.g. DNV Ice Class IA.
- 2.2 List navigational equipment including:
 - Radar – type and ability to detect floating ice (“growlers”).
 - Echo sounder (Sonar).
- 2.3 Navigation search lights – additional lights to discover ice and ice ridges visually during darkness.
- 2.4 Iridium satellite phones onboard for “black areas”.
- 2.5 Winterization if relevant - state winterization class.
- 2.6 Lifeboats – fuelled with “winter diesel”.
- 2.7 Spare parts – ship should carry vital spare parts relevant for the voyage.
- 2.8 Chart systems and last chart update.

3. Logistical Preparedness

- 3.1 Spare parts:
 - map ports where spare parts may be purchased or delivered,
 - map means of transport to the ship.
- 3.2 Map ports with depths and quays suitable for the ship, including repair facilities.
- 3.3 Map the nearest tugs, salvage and escort vessels including vessels that are not ice breakers.
- 3.3 Get available translations of official regulations and recommendations.
- 3.4 If possible, make prearrangements with salvors and include a clause relating to tow of the ship to European/Asian port for NSR, Norwegian mainland for Svalbard, and St. John/Newfoundland or Reykjavik/Iceland for Greenland trade.

4. Meteorological Preparedness

- 4.1. Available providers of ice and weather charts and forecasts, update regularity, sufficient quality/resolution?
- 4.2. Find out how these are transmitted to the ship, ref 2.4.

5. Crew Competence

- 5.1 Language – good knowledge of English – Russian speaking crewman for the NSR.
- 5.2 Describe the plan for watchkeeping for all watches. Preferably double manned watch in vital sections.
- 5.3 Is there a pilot on board or do the crew have the necessary competence for trade in Arctic waters?

6. Contractual Issues

6.1 Clearly identify who are the contractual parties involved in the voyage/trade and what role they have:

- shipowner,
- charterer,
- manager,
- operator

6.2 Identify special contractual duties, e.g. agreements on mutual salvage ref 3.4.