THE JOURNEY TO POLAR CODE COMPLIANCE

OVERVIEW

Four months before the IMO's Polar Code became maritime law, the German shipowner Oldendorff Carriers sent two Kamsarmax vessels on a voyage from the Canadian west coast to Raahe, Finland, via the Northern Sea Route (NSR).

The ice class IC ships, M/V Georg Oldendorff and M/V Gretke Oldendorff, left Vancouver 10 days apart in August 2016 and, although they were expected to encounter almost no ice, were escorted through the Laptev Sea by an icebreaker.

These incident-free transits of the NSR led Oldendorff to further explore the potential of the Arctic shipping routes. In light of the new IMO Polar Code regulations, future voyages needed to be considered.

CHALLENGES

In July 2018, Oldendorff asked ABS to support their journey to Polar Code compliance. It started with a one-day training session on the Code, including a review of its regulatory requirements and the hazards of polar operations.

As the Code makes an operational assessment mandatory for all ships entering Polar waters, ABS produced a comprehensive hazards report based on detailed environmental analysis that included elements such as expected air temperatures, sea-ice risks (based on ABS's adaptation of the IMO's Polar Operational Limitation Assessment Risk Indexing System [POLARIS] methodology), ice accretion, precipitation, seawater temperatures, etc.

The report included an interpretation of the associated data and a list of the operationally specific steps that needed to be taken before and during the mandatory operational assessment.

SOLUTION

For the sea-ice risk analysis, ABS-POLARIS, one of the software tools in the ABS Polar suite, was used to determine the ice class IC time of entry limitations for the area of operation.

In the ABS-POLARIS plot (Figure 1), the five-year average data for an IC ship and winter ice is illustrated. For this "normal" ice class operation, it depicts the "safe" risk index outcomes (RIO) greater than zero as green and blue contour regions.

During November 9-16, entrance into the western portion of the Kara Sea was shown as possible, as was entrance into the eastern region of the FIGURE 1 Chukchi Sea. However, the illustration suggested that a full unescorted transit of the NSR should not be attempted.

CHALLENGES

Proving Viability of:

- The Northern Sea Route
- The vessels for Polar transits
- Late summer Polar transit

SOLUTION

ABS-POLARIS Software

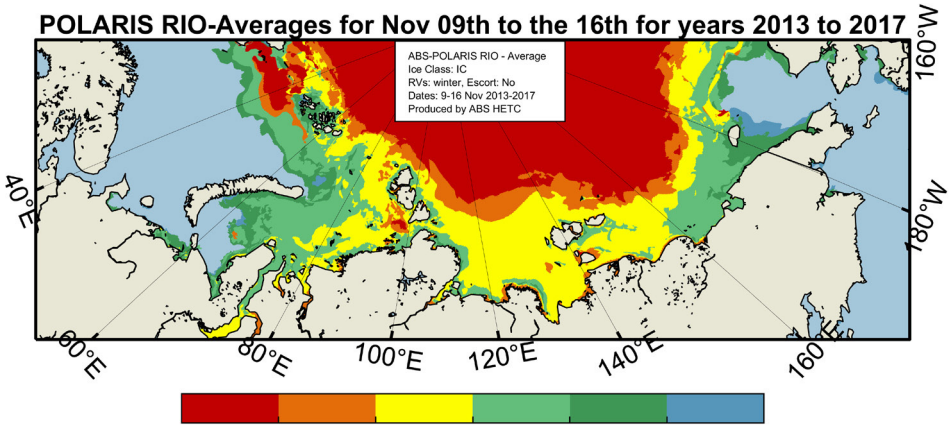
- Determines limitations for specific ice class of ship
- Determines limitations for operations at specific dates
- Supports compliance with IMO regulations for Polar transits

RESULTS

Voyages Proven Viable

- Paving way for issuance of IMO Polar Ship Certificate
- Potentially opens significantly shorter shipping route

FIGURE 1:



For operations planning, the IMO POLARIS methodology allows the user to add a value of 10 to the RIO result if an icebreaker escort is provided. This "plus 10" would change all yellow areas to green.

Subject matter experts on polar shipping from ABS met with a team from Oldendorff in Lübeck, Germany, for the operational assessment, hazard identification (HAZID) and workshop.
ABS presented analyses of the operational area and vessel-specific environmental hazards, while Oldendorff detailed the vessels' characteristics and the intended area of operations.

To support full compliance, the HAZID processes examined all potential hazards identified in the Code, and any additional hazards that were realistically probable during operations. The risk of each hazard was initially evaluated without risk-control measures. Each risk was then re-evaluated to consider existing safe guards and potential risk controls such as procedures and the modification or addition of equipment. Any controls were carefully considered for practicality and effectiveness.

ABS's experience with winterization projects emphasized the adoption of practical solutions. Oldendorff, for their part, offered significant experience with the area of operation and a robust safety culture that required the exercise to exceed the minimum requirements of the Code.

Finally, the risks were re-examined to consider all control measures and ensure that the risks were reduced to "As Low as Reasonably Practicable" levels.

After the workshop, ABS produced a report detailing the inputs, discussions and outcomes of the operational assessment, including guidance for writing the mandatory Polar Water Operational Manual (PWOM), and three lists:

- "Must have" procedures
- Procedures not required by the Code but considered necessary to improve safety or environmental protection while operating in polar waters
- Equipment to be added to the ships

While Oldendorff was generating their PWOM, ABS served as an advisor, answering questions, clarifying the Code's requirements and occasionally liaising with coastal states for regulatory updates.

With decades of experience in polar shipping and a comprehensive set of associated hazard-analysis tools, ABS was well positioned to support Oldendorff's compliance goals.

RESULTS

With its solid history of Arctic operations and a historic dedication to the safety of people, assets and environment, Oldendorff proved well suited for operations in Polar waters. They have ships that are now Polar Code 'ready', needing only to add minor pieces of equipment and undergo a Class survey to be certified for operations.

Issuance of a Polar Ship Certificate signifies compliance with the requirements of the Code.

The process showed that responsible Polar operations happen when the extensive preparations, that were the foundation for the journey to compliance, are put into practice to protect the environment, the ships and the people that serve on them.

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