

Polar Code begins in 2017



The International Maritime Organization's new Polar Code comes into force in 2017. The Polar Code contains new certificates, technical requirements and procedures, which have to be complied before entering the Polar waters.

The new compulsory requirements take into account the vessel's structural integrity in ice, technical operability in cold environment and include also requirements for training of the crew and for ship's operation manuals. They will apply for new ships keel laid after 1 January 2017 and for existing ships at their first intermediate or renewal survey after 1 January 2018.

New terminology

Polar Ship Certificate (PSC) defines where and when a ship can operate. It is a document approved by the flag authority and issued after survey.

The contents of the certificate include the category of the ship (A, B or C), the ice class including possible operating drafts and **Polar Service Temperature (PST)**. A chapter for operational limitations is included referencing maximum ice conditions, minimum temperature and maximum latitude for safe operation.

The operational limitations will be connected to the **POLARIS** system (**Polar Operation Limit Assessment Risk Indexing System**), which is a tool for the master to evaluate the risk in operation based on the prevailing ice conditions. It links the ice class and the actual ice conditions. The basis for the ice conditions evaluation is the WMO

(**World Meteorological Organisation**) "Egg Code". The **POLARIS** system is still under development at IMO but is expected to be ready this year.

An important part of the Polar Code is the **PWOM (Polar Water Operation Manual)**, which provides the owner, operator, master and crew with information regarding the ship's operational capabilities and limitations in order to support the operations in the Polar waters (see next page).

We can help

Each of these documents requires expert knowledge of ship designs and their operation in harsh environment. Aker Arctic has the required experience and know-how to assist ship owners and operators to comply with the various requirements of the Polar Code. These services include ship design, crew training and documentation services.

POLARIS links risk level to decision making



Risk values depend on ice type and ice class. Source IMO.

The World Meteorological Organisation (WMO) has developed standards for sea ice charting and observations. The standard format of "egg code" will be used for ice reporting worldwide. It provides information on ice concentration, type of ice and ice floe size. Available ice data from the Canadian Ice Service, the US National Ice Center, the Arctic and Antarctic Research Institute and the Danish Meteorological Institute will be used.

RIO _{base}	Ice classes PCT-PC7	Ice classes below PC7 and ships not assigned an ice class
RIO ≥ 0	Normal operation	Normal operation
-10 ≤ RIO < 0	Elevated operational risk	Operation subject to special consideration
RIO < -10	Operation subject to special consideration	Operation subject to special consideration

Evaluation criteria for independent operations. Source IMO.

Through a basic calculation procedure from the ice chart and the assessment of a vessel's risk values, the **Risk Index Outcome (RIO)** will tell whether or not to proceed in the actual situation. The **Risk Values (RV)** are a function of ship ice class, season of operation and state of the operation (independent operation or icebreaker escort). A positive RIO indicates acceptable risk (proceed) whereas a negative RIO indicates unacceptable risk (reassess situation).