

Some challenges with implementing the Polar Code on “Kronprins Haakon”



Øystein Mikelborg | Assistant project manager



Implementation of Polar Code

- The code will enter into force 01.01.2017
- Kronprins Haakon keel laid Sep 2015, to be delivered July 2017
- Nevertheless, the code will apply to all vessels from 01.01.2018

The goal of this Code is to provide for safe ship operation and the protection of the polar environment by addressing risks present in polar waters and not adequately mitigated by other instruments of the Organization.



Class DNVGL "Kronprins Haakon"

- NAUT-OSV(A)
- PC3 Icebreaker
- **DAT(-35)**
- **WINTERIZED BASIC**
- HELDK-SHF
- DYNPOS-AUTS
- **CLEAN DESIGN**
- E0
- RP
- DK(+)
- DP 1
- DNV + 1A1
- **COMF-V(3)/C(2)**



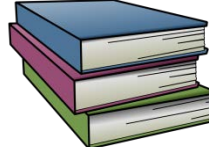
What "manuals/systems" needs to be prepared before ready for action



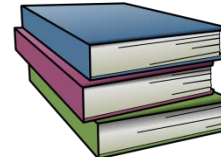
ISM



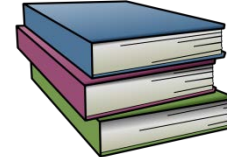
MLC-2006



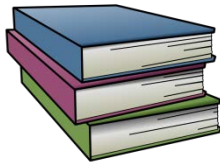
ISPS



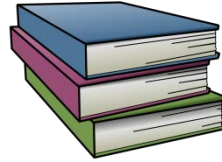
SEEMP



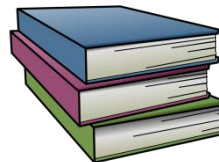
GMP



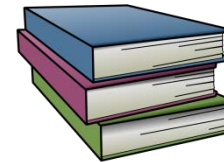
BWMP



SOPEP

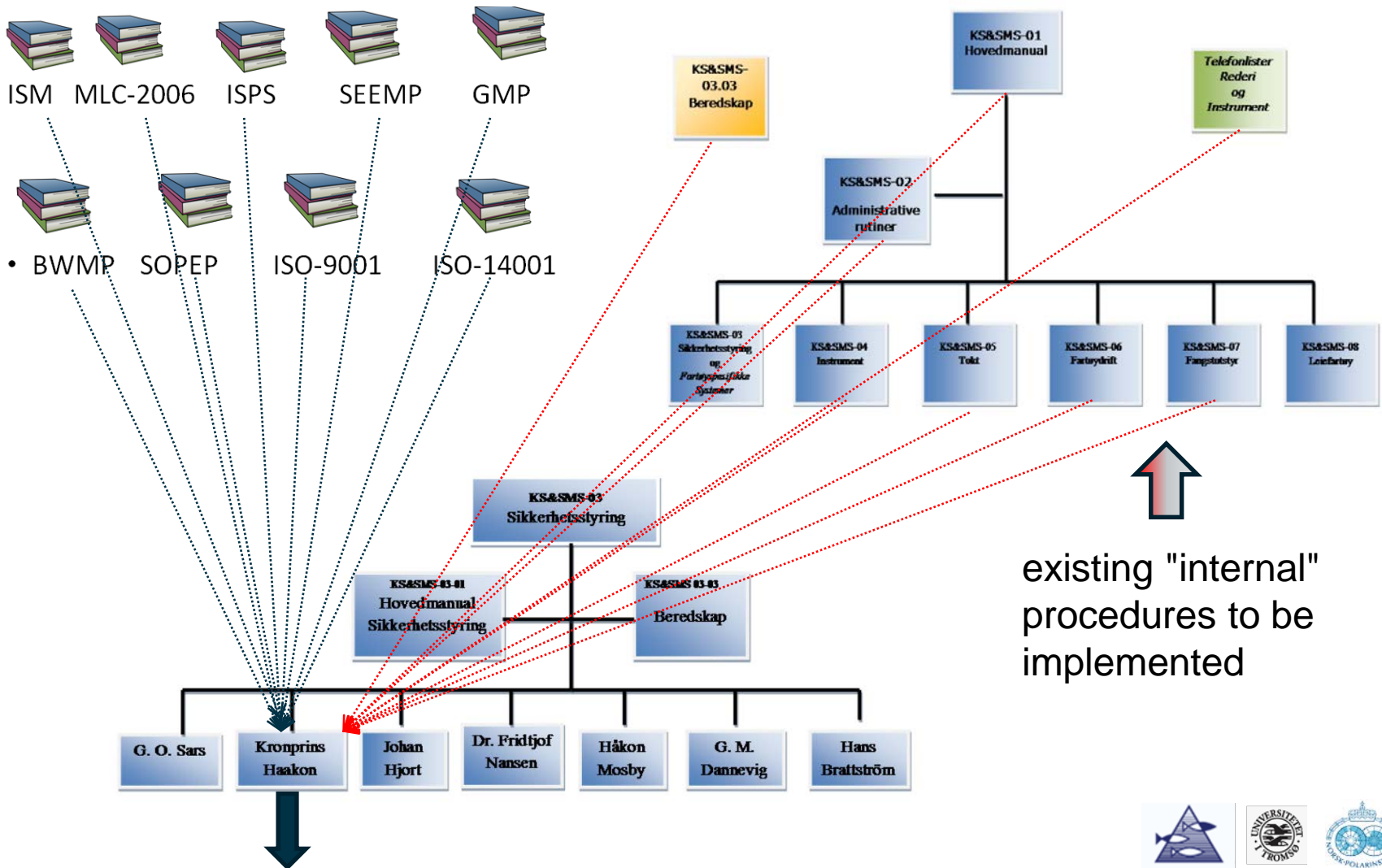


ISO-9001



ISO-14001

IMR QS&SMS



Ships operation manual



Include all procedures and regulations for this vessel.

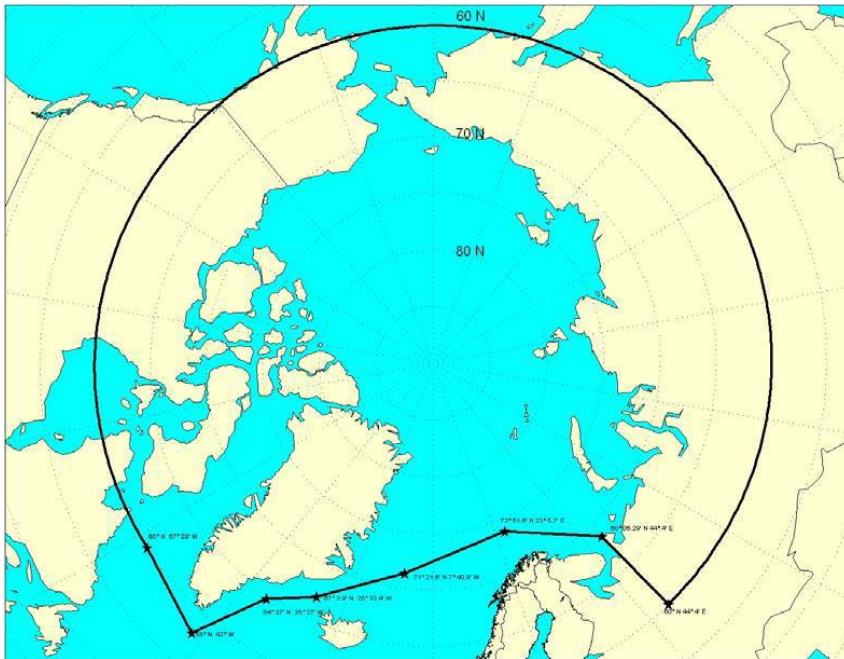
Then the

Polarcode

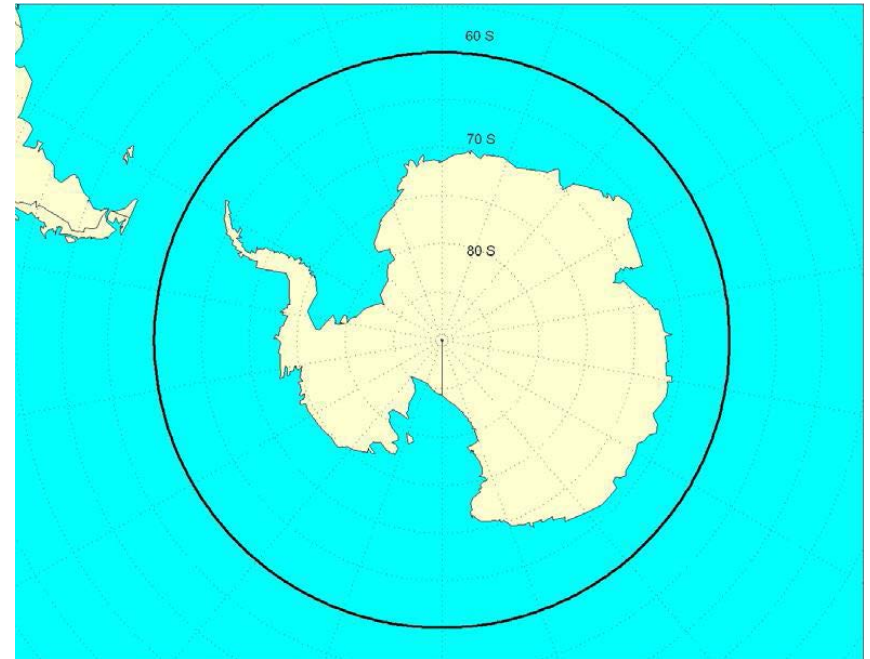
This is a add-on-code, in addition to already implemented regulations

What are the Polar Areas Concerned?

Arctic Waters



Antarctic Waters



Are there any different between North and south ?

- 3.2 The risk level within polar waters may differ depending on the geographical location, time of the year with respect to daylight, ice-coverage, etc. Thus, the mitigating measures required to address the above specific hazards may vary within polar waters and may be different in Arctic and Antarctic waters.
- Needs to adapt measures specifically to area of operations



© Tor Ivan Karlsen - NPI

Operational assessment

In order to establish procedures or operational limitations, an assessment of the ship and its equipment shall be carried out, taking into consideration the following:

The anticipated range of operating and environmental conditions, such as:

1. operation in low air temperature;
 2. operation in ice;
 3. operation in high latitude;
 4. potential for abandonment onto ice or
 5. hazards, as listed in section 3 of the I
 6. additional hazards, if identified.
- Ice
 - Topside icing
 - Extended periods of darkness/daylight
 - High latitude
 - Remoteness
 - Crew experience
 - Weather conditions
 - Sensitive environment

POLAR WATER OPERATIONAL MANUAL (PWOM)

- The Manual shall include or refer to information on the ship-specific capabilities and limitations in relation to the assessment.
- The Manual shall include or refer to specific procedures to be followed in the event of incidents in polar waters.
- The Manual shall include or refer to specific procedures to be followed in the event that conditions are encountered which exceed the ship's specific capabilities
 - If there are equipment not certified for PST, there shall be constraints stated in PWOM – cranes etc
- The PWOM should establish the means by which decisions as to whether ice conditions exceed the ship's design limits should be made, taking into account the operational limitations on the **Polar Ship Certificate**.



POLAR SHIP CERTIFICATE

- Every ship to which this Code applies shall have on board a valid Polar Ship Certificate.
- Where applicable, the certificate shall reference a methodology to assess operational capabilities and limitations in ice to the satisfaction of the Administration
- The requirement will also apply to existing vessels, with some additional requirements for new vessels (keel Lay after 1/1-2017)
- IMR, designer, yard and classification society have established a "working group" to evaluate measures needed to fulfill requirements.



“Ice Capable vessel is of limited value unless her personnel are fully competent” This implies a comprehensive program of training for key decision making individuals



Training for Crew

Ice Condition	Tanker	Passenger Vessel	other (Cargo Vessel)
Ice free	N/A	B for Master and Officer On Watch	N/A
Open Water	B for Master and Officer On Watch	B for Master and Officer On Watch	N/A
Above Open Water	A for Master, Chief Mate B for Officer On Watch	A for Master, Chief Mate B for Officer On Watch	A for Master, Chief Mate B for Officer On Watch

A – Advanced (**simulator-practical**) B – Basic (**Classroom**)

Number and level of ice certified personnel is tailored to ice and ship type

Use of “ice pilots” not allowed under present code,



Training for Crew

- STWC regulation will enter into force 1/1-2018.
- Sea Time Requirement?
- Recording and Presenting Seatime (and approval?)
- Region of Experience
- Recognizing Previous Experience
- Ice Pilots?
- Recertification Process?



Temperature

- Mean Daily Low Temperature (MDLT) means the mean value of the daily low temperature for each day of the year over a minimum 10 year period.
- Polar Service Temperature (PST) means a temperature specified for a ship which is intended to operate in low air temperature, which shall be set at least 10°C below the lowest MDLT for the intended area and season of operation in polar waters.

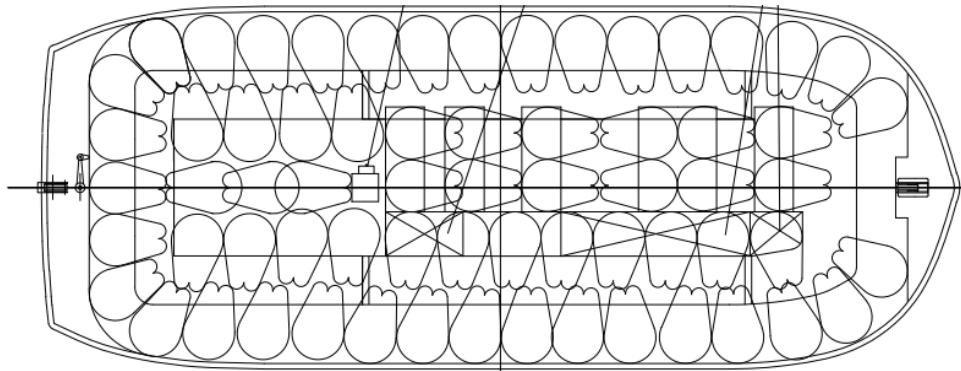


Life saving appliances

- Resources shall be provided to support survival following abandoning ship, whether to the water, to ice or to land, for the maximum expected time of rescue (minimum 5 days). These resources shall provide:

A habitable environment

- Protection of persons from the effects of cold, wind and sun;
- Space to accommodate persons equipped with thermal protection adequate for the environment;
- Means to provide sustenance;
- Safe access and exit points
- Means to communicate with rescue assets.



What Will You Need to Operate in Polar Waters?

- 1. Polar Ship Certificate Defining Capability and limitations**
- 2. Polar Waters Operational Manual defining operating procedures**
 - Similar to ISM DOC, MLC-2006 ?
- 3. Qualified Deck Officers Training and experience**
 - Approval process ?!?
- 4. Equipment certified for the climate**

