

“Polar Code”

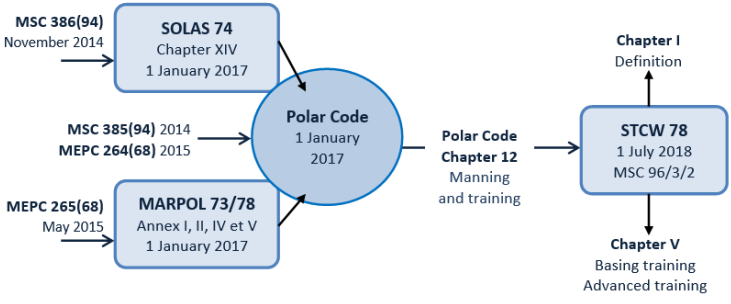
International code for ships operating in polar waters

01/02/2017
Hervé Baudu; Senior lecturer in Nautical Science in the French National Maritime College – Marseille

1/10

Polar Code- WHAT:

- Entered into force on 1 January 2017:
 - ✓ Polar Water Operational Manual (PWOM)
 - ✓ New SOLAS Chapter XIV
 - ✓ MARPOL Amendments
 - ✓ New STCW Chapter V



01/02/2017 – Hervé Baudu

[IMO link to download Polar Code](#)

2/10

Polar Code- WHERE:

- Areas beyond 60th degree of latitude
- Excluding the Baltic Sea

01/02/2017 – Hervé Baudu 3/10

Polar Code- WHAT:

- Equipment
- Operations & construction
- Manning

WHAT DOES THE POLAR CODE MEAN FOR SHIP SAFETY?

EQUIPMENT

- WINDOWS ON BRIDGE:** Must be clear of ice, frost, snow, mist, spray and condensation.
- LIFEBOATS:** All lifeboats to be partially or totally enclosed type.
- CLOTHING I:** Adequate thermal protection for all persons on board.
- CLOTHING II:** On passenger ships, all crew members to have an adequate thermal protection and for each person on board.
- ICE REMOVAL:** Special equipment for ice removal, such as electrical and pneumatic devices, remote tanks such as seen on modern ships.
- FIRE SAFETY:** Sufficient equipment available in cold temperatures, protected from fire, suitable for personnel wearing bulky and cumbersome cold weather gear.

OPERATIONS & MANNING

- NAVIGATION:** Receive information about ice conditions.
- CERTIFICATE & MANUAL:** Required to have an Ice Class & Polar Ship Certificate and the ship's Polar Water Operational Manual.
- TRAINING:** Masters, chief mates and officers in charge of a navigational watch must have completed appropriate basic training for open-water operations, and advanced training for other waters, including ice.

DESIGN & CONSTRUCTION

- SHIP CATEGORIES:** Three categories of ship which may operate in Polar Waters, based on all relevant load-carrying capacity, ice class and other relevant conditions, best serves What A and B.
- MATERIALS:** Must be selected to operate in low air temperatures and be constructed with materials suitable for operation at the ship's polar service temperature.
- INTACT STABILITY:** Sufficient stability in intact condition when subject to ice operation and the stability calculations must take into account the icing allowance.
- STRUCTURE:** In ice strengthened ships, the structure of the ship must be able to resist both global and local structural loads.

BACKGROUND INFO

- THE INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS WAS ADOPTED NOVEMBER 2014 BY THE IMO MARINE SAFETY COMMITTEE.
- IT APPLIES TO SHIPS OPERATING IN ARCTIC AND ANTARCTIC WATERS.
- THE AIM IS TO PROVIDE FOR SAFE SHIP OPERATION AND THE PROTECTION OF THE POLAR ENVIRONMENT BY ADDITIONAL RULES PRESENT IN POLAR WATERS AND NOT ADEQUATELY MITIGATED BY OTHER INSTRUMENTS.

01/02/2017 – Hervé Baudu 4/10

[IMO link to download infographic](#)

Polar Code- WHAT:

- Environment protection
- Oil pollution
- Sewage and Garbage restrictions

HOW THE POLAR CODE PROTECTS THE ENVIRONMENT

OIL
DISCHARGES Discharge into the sea of oil or oily mixtures from any ship is prohibited.
STRUCTURE Double hull and double bottom required for all oil tankers, including those less than 5,000dwt (A/B ships constructed on or after 1 January 2017).
HEAVY FUEL OIL Heavy fuel oil is limited to the Antarctic under MARPOL Annex II, and is prohibited from use in ice-covered areas.
LUBRICANTS Consider using non-toxic biodegradable lubricants or water based systems. All lubricated components outside the undercarriage must have correct seawater interface.
INVASIVE SPECIES
INVASIVE AQUATIC SPECIES Measures to be taken to minimize the risk of invasive species spreading through ship ballast water and sediments.

SEWAGE
DISCHARGES I No discharge of sewage in polar waters allowed, except under specific circumstances.
TREATMENT PLANTS Ships may use approved sewage treatment plants, and discharge treated effluent, as far as practicable both the nearest land, dry land, ice shelf, or areas of specified ice concentration.
DISCHARGES II • sewage not comminuted • sewage not comminuted or comminuted can be discharged at a distance of more than 12nm from any ice shelf or fast ice • Comminuted and dewatered sewage may be discharged more than 12nm from any ice shelf or fast ice.

GARBAGE
PLASTICS All discharge of plastics prohibited under MARPOL Annex V.
FOOD WASTES I Discharge of food wastes into the sea is prohibited.
FOOD WASTES II Food wastes which have been comminuted have been approved of, provided that they are only when ship is not less than 12nm from the nearest land, except ice shelf, or treated fast ice.
ANIMAL CARCASSES Discharge of animal carcasses is prohibited.
CARGO RESIDUES Cargo residues, cleaning agents or effluents in bulk and water may only be discharged if they are not found in the marine environment. Only regulatory and non-regulatory measures in place are required to ensure compliance with the Antarctic area under MARPOL.

CHEMICALS
DISCHARGES Discharge of monitored liquid substances (ML) or substances containing ML is prohibited in polar waters.

FAST ICE Sea ice which forms and remains fast along the coast, where it is attached to the shore, by its ice wall, or by ice front, ice-edge crests or grounded ice-berg.
ICE SHELF A floating ice shelf of considerable thickness abutting to the coast from across sea-ice, attached to the coast.

SHIP CATEGORIES Three categories of ship designed to operate in polar waters to:
 A. at least medium first year ice
 B. at least thin first year ice
 C. open water/ice conditions less severe than A and B.

BACKGROUND INFO
 • THE INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS (POLAR CODE) ENTERS INTO FORCE ON 1 JANUARY 2017.
 • IT APPLIES TO SHIPS OPERATING IN ANTARCTIC AND ARCTIC WATERS ACCORDING TO EXISTING MARPOL REQUIREMENTS.
 • IT APPLIES TO SHIPS FROM THEIR CONSTRUCTION AND PROVIDED THE ENVIRONMENT BY ADDRESSING THE UNDOUBTED RISKS ASSOCIATED WITH SHIP OPERATIONS IN POLAR WATERS.

DEFINITIONS

IMO

01/02/2017 – Hervé Baudu

[IMO link to download infographic](#)

5/10

Polar Code- WHAT:

- Categories of ships in polar waters

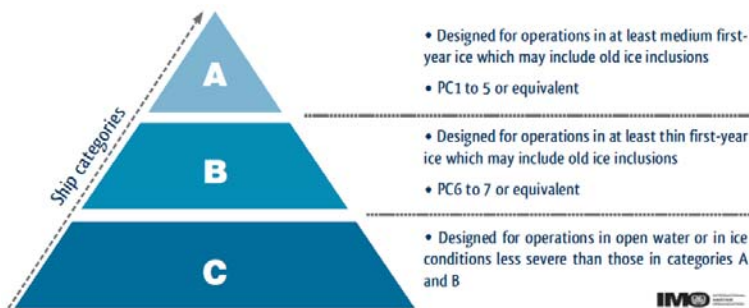


Figure 3 – Categories of Ships Operating in Polar Waters.
 Note: PC = International Association of Classification Societies polar ship category.
 Source: International Maritime Organization.

In order to comply, a polar navigation certificate shall be issued by the flag State:

Category A and B: ships designed to operate in Ice infested waters.


Category C: ships designed to operate in open waters.

01/02/2017 – Hervé Baudu

6/10

Polar Code- WHO:

- Bridge Officers

 **OMI** ORGANISATION MARITIME INTERNATIONALE

Ice conditions	Tankers	Passenger ships	Others
Ice free	Not applicable	Not applicable	Not applicable
Open waters (< 1/10 and no growlers)	Basic training for master, chief mate and officers in charge of a navigational watch	Basic training for master, chief mate and officers in charge of a navigational watch	Not applicable
Others waters (> 1/10 and old ice inclusions)	Advanced training for master and chief mate. Basic training for officers in charge of a navigational watch	Advanced training for master and chief mate. Basic training for officers in charge of a navigational watch	Advanced training for master and chief mate. Basic training for officers in charge of a navigational watch


Definitions :

Ice free waters mean no ice present. If ice of any kind is present, this term shall not be used.

Open waters mean a large area of freely navigable water in which sea ice is present in concentrations less than 1/10. No ice of land origin is present.


Others waters mean Ice concentrations > 1/10 and land Ice inclusions.

01/02/2017 – Hervé Baudu 7/10



Polar Code- HOW:

- 2 kind of formation :
 - ✓ **Basic** for master, chief mate and officers in charge of a navigational watch;
 - ✓ **Advanced** for master and chief mate
- At the standard of the IMO Model Course (That should be approved in early February at the next session of the HTW)

 **OMI** ORGANISATION MARITIME INTERNATIONALE

Definitions :


Basic certificate: 34h

- Ice Nomenclature, Characteristics and Detection, Regulations and Standards, Vessel Characteristics, Manoeuvring in Ice, Voyage Planning, Icebreaker Assistance, Vessel Performance in Polar Waters/Low Air Temperatures, Crew Preparation, Working Conditions & Safety, Environment.

Advances certificate: 30h

- Regulations, Standards & Shipboard Documentation, Vessel Characteristics, Manoeuvring in Ice, Passage Planning, Icebreaker Ops, Crew Preparation, Working Conditions & Safety.

01/02/2017 – Hervé Baudu 8/10



Polar Code- HOW:

- Both trainings on Ice simulator
- Ensm centre of Marseille



01/02/2017 – Hervé Baudu

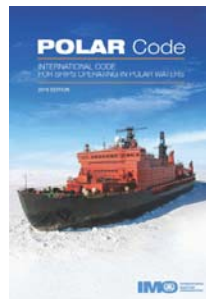


9/10



01/02/2017 – Hervé Baudu

Ponant Austral - Antarctic
© Photo Hervé Baudu



The mandatory Polar Code requirements, which were specifically tailored for the polar environments, go above and beyond those of existing IMO conventions such as MARPOL and SOLAS, which are applicable globally and will still apply to shipping in polar waters.



10/10