



IHB File N° S3/3055

**CIRCULAR LETTER 07/2013  
21 January 2013**

**IHO CONTRIBUTION TO THE DEVELOPMENT OF A MANDATORY CODE FOR SHIPS  
OPERATING IN POLAR WATERS**

Dear Hydrographer,

1. Ships operating in the Arctic and Antarctic environments are exposed to a number of unique risks which include the relative lack of good nautical charts. In 2009, the IMO Maritime Safety Committee (MSC) approved proposals for the development of an international code of safety for ships operating in polar waters (Polar Code), which would cover the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to ships operating in the inhospitable waters surrounding the two poles. The IMO Sub-Committee on Ship Design and Equipment (DE) has been tasked with coordinating the work, reporting to MSC and to the Marine Environment Protection Committee (MEPC).
2. Starting in 2010 (DE53), the work on the development of the Polar Code has been progressed mainly by a Correspondence Group (CG) chaired by Norway. The views of the Sub-Committee on Safety of Navigation (NAV) were formally sought following DE56 (February 2012). However, the outcome of the review by the Technical Working Group at NAV58 (July 2012) did not elaborate on hydrographic issues (see documents NAV 58/14 - paragraphs 13.10 to 13.18 - and NAV 58/WP.5 - paragraphs 5.1 to 5.3 and annex 5).
3. Following related considerations by the IHO Hydrographic Commission on Antarctica and the Arctic Regional Hydrographic Commission, the President of the IHB Directing Committee took advantage of discussions at MSC91 (November 2012) to express concern that the consequences of poor hydrography in polar waters had not been sufficiently highlighted in the development of the Polar Code. The CG chair invited IHO to join her group and provide comment on the report, which was to be submitted to DE 57 meeting in April 2013. A draft copy of the CG report was subsequently provided to the IHB.
4. The draft text annexed to the CG report (DE 57/11/6) consists of an Introduction followed by two main parts dealing respectively with mandatory requirements (Part A) and additional guidance (Part B). The IHB has prepared a submission on behalf of the IHO which offers comments and inputs to the Introduction and to Part B.
5. The IHO submission to DE57 is attached for the information of Member States. Unfortunately, due to the late posting of the CG report by the IMO secretariat (18 January 2013) and the need to meet the DE57 document submission deadline (25 January 2013), the submission could not be completed in time for it to be reviewed by IHO Member States.
6. Considering the current status of the draft text and noting that the target completion year is 2014, it is likely that the development of the Polar Code will involve further discussions at and after

DE57. On that basis, the Directing Committee invites Member States to brief their delegation at DE57 on the IHO submission and seek their support to reflect hydrographic considerations in the Polar Code.

7. The IHO will be represented at DE57, subject to any other conflicting commitments. Member States wishing to comment on the IHO submission ahead of the DE57 session are invited to send their input to the IHB ([info@iho.int](mailto:info@iho.int)) not later than 1<sup>st</sup> March 2013.

On behalf of the Directing Committee  
Yours sincerely,



Robert WARD  
President

Annex: IHO Submission to DE57 (DE 57/11/xx)

SUB-COMMITTEE ON SHIP DESIGN  
AND EQUIPMENT  
57th session  
Agenda item 11

DE 57/11/XX  
18 January 2013  
Original: ENGLISH

## **DEVELOPMENT OF A MANDATORY CODE FOR SHIPS OPERATING IN POLAR WATERS**

### **Comment on the Report of the Correspondence Group**

**Submitted by the International Hydrographic Organization (IHO)**

#### **SUMMARY**

<i>Executive summary:</i>	This document comments on the report of the Correspondence Group on Development of a mandatory Code for ships operating in Polar waters.
<i>Strategic direction:</i>	5.2
<i>High-level action:</i>	5.2.1
<i>Planned output:</i>	5.2.1.19
<i>Action to be taken:</i>	Paragraph 8
<i>Related documents:</i>	DE 57/11/6

#### **Introduction**

1 At DE 56 a correspondence group (GC) was established to work intersessionally to develop a mandatory Code for ships operating in Polar waters. During discussions at MSC 91, the IHO expressed concern that the consequences of poor hydrography in Polar waters had not been sufficiently highlighted in that work. The CG chair invited IHO to join the group and provide comment on the report, which was being submitted to DE 57.

#### **Status of nautical charting in Polar waters**

2. Systematic and complete hydrographic surveys have not been carried out in many polar areas due to their extensive, remote and inhospitable nature. The presence of ice throughout much of the year limits the ability to conduct hydrographic surveys. Increasingly large unsurveyed areas may be becoming available for navigation due to the melting of glaciers and sea ice. The result assessed by the IHO is that 95% of the Antarctic Region is unsurveyed and appropriate scale chart coverage is generally inadequate for coastal

navigation. The situation is similar in the Arctic Region (see for example NAV 55/INF.6 on the situation in Greenland) although consolidated figures are not available.

3. The geographical positions of features are often unreliable, and even those correctly placed relative to adjacent features may contain considerable errors if separated by large distances. Some modern charts are based on satellite imagery; however the lack of proper ground control means they are unlikely to have the same accuracy as those covering lower latitudes. Soundings, topographic detail and all other navigational information are generally incomplete. The limited depth information available may be derived from passage soundings or from old and incomplete surveys and may be of poor quality. The seabed in many areas is very irregular, which means that interpolation between charted depths is generally unreliable.

4. Inadequately surveyed areas can be identified on paper charts (and Raster Navigational Charts) using chart source or zone of confidence (ZOC) diagrams.

5. The use of Electronic Chart Display and Information Systems (ECDIS) in Polar waters requires the availability of Electronic Navigational Charts (ENCs). These must use the WGS 84 positioning datum and therefore require the accurate positioning of topography, including the coastline, and hydrography based on this datum. At present, few ENCs are available for Polar waters in Navigation Purpose bands 3 to 6 (coastal, approach, harbour, and berthing). Although the IHO has been leading an effort to prioritize, encourage and monitor the conduct of hydrographic surveys in the Polar regions through its Hydrographic Commission on Antarctica (HCA) and through the Arctic Regional Hydrographic Commission (ARHC), it will take many years for the situation to improve as national priorities generally focus on charting deficiencies at lower latitudes (see MSC/Circ.1179).

### **Impact on navigation**

6. Except in limited areas, the chart coverage of Polar waters is inadequate for coastal navigation. Therefore mariners should keep to the charted areas, except in case of absolute necessity. Even in charted areas extra vigilance should be exercised as unsurveyed and uncharted shoals may exist unless the chart is based on modern surveys that include a full search of the sea floor.

7. Based on the above considerations, the IHO proposes a number of comments and inputs to the amended draft text of the Polar Code submitted by the Correspondence Group. These are shown in the Annex.

### **Action requested of the Sub-Committee**

8. The Sub-Committee is invited to note the information provided in this document, ensure that it is reflected in the development of the Polar Code and take any other action it considers appropriate.

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## Annex

### **IHO comments and inputs to the amended draft text of the Mandatory Code for Ships Operating in Polar Waters attached as Annex 1 to document DE 57/11/6**

#### **Preamble**

Add the following new paragraph after 2:

*The Code acknowledges that the Polar Regions impose additional navigational demands beyond those normally encountered. Except in limited areas, the chart coverage is inadequate for coastal navigation. Therefore mariners should keep to the charted areas, except in case of absolute necessity. Even in charted areas extra vigilance should be exercised as unsurveyed and uncharted shoals may exist unless the chart is based on modern surveys that include a full search of the sea floor.*

#### **Sources of hazards**

In the initial wording of this section, merge and complement items .6 and .7 as follows:

*.6 ~~remoteness and~~ possible lack of accurate and complete hydrographical data and information, reduced availability of navigational aids and seamarks with increased potential for groundings compounded by remoteness and limited readily deployable SAR facilities;*

and renumber accordingly item .8.

In the alternative wording of this section, replace item .5 with the following text:

*.5 possible lack of accurate and complete hydrographical data and information, reduced availability of navigational aids with increased potential for groundings compounded by remoteness and limited readily deployable SAR facilities;*

#### **PART B**

Insert a new section as follows:

##### ***Additional guidance to Chapter 9***

*As the chart coverage of Polar waters is generally inadequate for coastal navigation, mariners should exercise extra care to plan and monitor their voyage accordingly, taking due account of the information and guidance in the appropriate nautical publications.*

*They should be familiar with the status of hydrographic surveys and the availability and quality of chart information for the areas in which they intend to operate. They should also be aware of potential chart datum discrepancies with GNSS positioning. They should plan their route through charted areas and well clear of known shoal depths.*

*Deviation from the planned route should be avoided and when operating on the continental shelf the echo-sounder should be working and monitored constantly to detect any sign of unexpected depth variation, especially when the chart is not based on a full search of the sea floor. Independent cross-checking of positioning information (i.e. radar and GNSS) should be undertaken at every opportunity.*

*Mariners should ensure to report to the relevant charting authority (Hydrographic Office) any information that might contribute to improving the nautical charts and publications.*