



SUB-COMMITTEE ON SHIP DESIGN AND  
EQUIPMENT  
54th session  
Agenda item 13

DE 54/13/1  
27 July 2010  
Original: ENGLISH

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

**Risk-based concept**

**Submitted by Germany**

**SUMMARY**

*Executive summary:* This document contains comments attempting to support the further work on development of a mandatory Code for ships operating in polar waters

*Strategic direction:* 5.2

*High-level action:* 5.2.1

*Planned output:* 5.2.1.19

*Action to be taken:* Paragraph 12

*Related document:* DE 53/26 (section 18) and DE 54/INF.3

1 At its fifty-third session, the Sub-Committee tasked a correspondence group (CG) with the development of a draft mandatory code for ships in polar waters, under the co-ordination of Norway. This CG was preceded by a discussion considering also the structure of this Code.

2 Germany is of the opinion that the development of this Code offers an excellent opportunity to consider some of the results related to the safety-level approach within the recent discussion on goal-based standards (GBS). Germany discussed this informally at DE 53, receiving positive feedback. This idea and the expected benefit for the IMO work are summarized in this submission.

**GBS-based Code for ships in polar waters**

3 The discussion and development of GBS began at MSC 77. One of the then adopted basic principles was that GBS should provide the standards against which the safety of ships should be verified both at design and construction stages as well as subsequently during ship operations (MSC 78/6/2). Furthermore, goals should be defined which do not set prescriptive requirements or give specific solutions.

4 Due to different interpretation of these objectives, the discussion and work was separated into two basic approaches: deterministic and safety-level based. In the context of

the development of the Code for ships operating in polar waters, Germany was in favour of a consideration of the results of the discussion with respect to the safety-level approach as well as the draft of the GBS guidelines.

5 Based on these results, Germany developed a proposal for the structure of the Code for ships operating in polar waters considering:

- .1 the goals with respect to safety of crew and environmental protection;
- .2 specifying the ship functions addressed by the Code;
- .3 general comments and requirements with respect to the boundary conditions (environmental and operational) for ships operating in polar waters as well as an opening for alternative design; and
- .4 the functional requirements for the different ship functions, each with a specification of goals as well as exemplary prescriptive requirements.

6 The proposal discussed at DE 53 is illustrated in document DE 54/INF.3. For this illustration samples from various submissions to DE 53 and from the SOLAS Convention (2010) have been used as follows: Canada (DE 53/18/2), Russian Federation (DE 52/9/3); Japan (DE 52/1) and MSC 84/5/3 (Germany).

### **Expected benefits**

7 Germany expects that a Code following these basic requirements would provide a sound basis for the application of goal-based standards concept. Even more, by specifying functional requirements the basis for alternative design is provided because the safety objectives to be addressed within the engineering analysis of alternative design are clearly given. This, in combination with exemplary prescriptive requirements, provides a Code open for both, prescriptive and safety-based design and operation.

8 Furthermore, the application of the draft guidelines for GBS is expected to provide important input for the finalization of these guidelines and, hence, for the development of safety-level based standards.

9 Being aware that the structure and wording may be a challenge in the development of the Code, Germany is of the opinion that the potential benefits in considering this approach prevail.

### **Work of the correspondence group**

10 Germany supports the present discussion in the correspondence group. Germany will continue to actively support the further developments and thereby continue to develop the safety-level approach. Germany proposes that the approach needs to be holistic.

11 Germany suggests collecting hazards in the course of the further work without any categorization. Looking at categorization may restrict the understanding of the situation of ships operating in polar waters.

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

12 The Sub-Committee is invited to note the information provided, together with the relevant information document DE 54/INF.3, and decide as deemed appropriate.