

MARITIME SAFETY COMMITTEE  
93rd session  
Agenda item 10

MSC 93/10/16  
25 March 2014  
Original: ENGLISH

## SHIP DESIGN AND CONSTRUCTION

### Use of goal-based standards in the draft Polar Code

#### Submitted by the United States

#### SUMMARY

*Executive summary:* This document comments on the current approach to using goal-based standards and functional requirements in part I-A of the draft Polar Code. The United States is of the opinion that there is a need for greater clarity on the legal effect of functional requirements and the legal relationship between functional requirements and prescriptive regulations, as they appear in part I-A of the draft Polar Code.

*Strategic direction:* 5.2

*High-level action:* 5.2.1

*Planned output:* 5.2.1.15

*Action to be taken:* Paragraph 16

*Related documents:* MSC 93/10; SDC 1/26 and MEPC 66/11/13

#### Background

1 This document comments on document MSC 93/10, which reports on the first session of the Sub-Committee on Ship Design and Construction (SDC), and is submitted in accordance with paragraph 6.12.5 of the *Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.4/Rev.2).

2 In keeping with other efforts at IMO, the draft Polar Code employs a risk-based and goal-based standards (GBS) approach. Based on a submission noting the usefulness of GBS in developing safety-level based standards, the Sub-Committee on Ship Design and Equipment (DE), at its fifty-fourth session, first endorsed using a GBS approach, noting that it would give sufficient flexibility for alternative designs and arrangements. This approach is similar to the GBS approach in the *Generic Guidelines for developing IMO goal-based standards* (MSC.1/Circ.1394). This document focuses on functional requirements in part I-A, with the understanding that the MEPC will separately consider the use of functional

requirements in part II-A of the draft Polar Code, as functional requirements raise different concerns in parts I-A and II-A (see document MEPC 66/11/13).

3 It is important that the draft Polar Code include language that provides an unambiguous explanation of how functional requirements should be interpreted. This document proposes such language.

### **Functional requirements**

4 This Committee has some experience in developing and implementing GBS in the safety context, although various precedents have taken different approaches to "functional requirements." The fact that, in practice, different approaches have been developed for implementing GBS in legally binding instruments heightens the need for clarity about how the GBS approach, in particular the functional requirements, are intended to operate in the Polar Code.

5 The Generic Guidelines does not define the term "functional requirements." However, the context of that document (i.e. as a framework of the "Rules for Rules") indicates that if functional requirements are intended to create any legal obligations, those obligations do not go beyond what can be met through compliance with prescriptive requirements. On the contrary, it appears that the functional requirements and goals are simply intended to represent the objectives against which proposed prescriptive requirements, or proposed alternatives to compliance with prescriptive requirements in force, are to be measured.

6 For example, regulation 1 of the ISPS Code provides a list of objectives, followed by a non-exhaustive list of "functional requirements" that do not themselves contain any legally binding terms, but instead are a descriptive list of actions: "In order to achieve its objectives, this [ISPS] Code embodies a number of functional requirements. These include, but are not limited to: gathering and assessing information..." As such, the functional requirements do not themselves give rise to legal obligations, and compliance with the ISPS Code is demonstrated using the prescriptive requirements only. In regulation 2.2 of SOLAS chapter II-2, a somewhat similar approach is taken: functional requirements again are presented without legally binding terms, with similar chapeau language: "In order to achieve the fire safety objectives set out in paragraph 1, the following functional requirements are embodied in the regulations of this chapter as appropriate..."

7 Other parts of SOLAS chapter II-2, in contrast, use legally binding language to set forth functional requirements (e.g. "For this purpose, the following functional requirements shall be met: the ship shall be..."). Critically, however, several provisions in chapter II-2 expressly clarify how these legally binding functional requirements in the chapter relate to the legally binding prescriptive requirements that follow: compliance with the prescriptive requirements necessarily constitutes compliance with the functional requirements as well, and deviation from a prescriptive requirement is permissible, but in that case the functional requirement must be achieved using the methodology for alternative design and arrangements specified in that chapter. See, e.g. regulation 2.3 ("A ship shall be considered to meet the functional requirements set out in paragraph 2 ... when either: the ship's design and arrangements, as a whole, comply with the relevant prescriptive requirements...") and regulation 17.2 ("Fire safety design and arrangements may deviate from the prescriptive requirements ... provided that the design and arrangements meet the fire safety objectives and the functional requirements.").

8 It is not clear, however, whether the functional requirements in the draft Polar Code follow any of the models above. Terms indicating a legally binding intent (like "shall" and "in order comply with the functional requirements") are often used, but if the functional requirements give rise to legal obligations, there is no agreed provision like the ones in SOLAS chapter II-2 clarifying the general relationship between functional and prescriptive requirements, and what, if anything, a ship must do to comply the functional requirements beyond what is specified in prescriptive requirements. Some language in the draft part I-A supports the understanding that compliance with prescriptive requirements necessarily constitutes compliance with certain functional requirements – such as the chapeau introducing "functional requirements" in several chapters ("in order to achieve the goal set out in paragraph X.X.X. above, the following functional requirements are embodied in the regulations of this chapter as appropriate," though the phrase "as appropriate" should be deleted for clarity) and the chapeau language for associated prescriptive requirements ("In order to comply with the functional requirements of paragraph X.X.X above, the following apply"). But other provisions lack such chapeau language, as though the functional requirements could create the need to take measures beyond those specified in prescriptive requirements, and in any event it is not specified expressly that compliance with all the prescriptive requirements constitutes compliance with the associated functional requirements. Paragraph 5.4 of the Introduction contains an alternative that offers one approach, but remains in brackets.

9 In sum, this lack of consistency in labelling and framing the functional requirements and prescriptive requirements of each chapter, and the ambiguity concerning the precise legal relationship between the functional requirements and the prescriptive requirements, creates significant confusion about the intended legal nature of the functional requirements. Such confusion could give rise to differing interpretations by various flag and port States, undermining the effectiveness and efficiency of the Polar Code.

10 In addition to the concerns raised above, the United States notes that the draft Polar Code contains functional requirements for which no prescriptive requirements have been developed. Specific reference is made to the functional requirements listed below. As outlined in MSC.1/Circ.1394, the goals and functional requirements are presented as "Rules for Rules", where compliance is demonstrated separately through regulations developed based on these "Rules for Rules." There exists no clarity as to the method for demonstrating compliance with these specific functional requirements. This presents the undesirable situation for Administrations to certify compliance with these functional requirements without prescriptive regulations and the lack of guidance and clarity surrounding the use of GBS in the draft Code. In addition, there exists the opportunity for varying interpretations of the functional requirements by different port States beyond what was considered adequate for compliance by the Administration.

- .1 chapter 8 (Fire safety/protection) – paragraph 8.2.2.3 related to radio communication equipment;
- .2 chapter 9 (Life-saving appliances and arrangements) – paragraph 9.2.1.2 related to survival craft and muster and embarkation arrangements;
- .3 chapter 9 (Life-saving appliances and arrangements) – paragraph 9.2.2.2 related to evacuation of persons and deployment of survival equipment in ice covered waters or directly onto the ice;
- .4 chapter 11 (Communication) – paragraph 11.2.1.1 related to two-way voice and data communications;

- .5 chapter 11 (Communication) – paragraph 11.2.1.2 related to communications with escort and convoy operations; and
- .6 chapter 11 (Communication) – paragraph 11.2.2.2 related to distress alerting and locating in survival craft other than rescue boats and lifeboats.

### **A solution to provide legal clarity**

11 For the reasons discussed above, the United States is of the view that greater clarity needs to be brought to the use of functional requirements in part I-A of the draft Code. Specifically, instead of paragraph 5.4 of the Introduction, the United States proposes that chapter 1 of part I-A include the following language, similar to the approach in SOLAS chapter II-2, regulation 3:

"Each chapter in this part consists of the overall goal of the chapter, functional requirements to fulfill the goal, and prescriptive requirements. A ship shall be considered to meet a functional requirement set out in this part when either:

- .1 the ship's design and arrangements comply with all the prescriptive requirements associated with that functional requirement; or
- .2 part(s) or all of the ship's relevant design and arrangements have been reviewed and approved in accordance with regulation 4 of SOLAS chapter XIV, and any remaining parts of the ship comply with the relevant prescriptive requirements."

12 In addition, functional requirements without any associated prescriptive requirement should be carefully considered, with specific prescriptive requirement(s) developed for these functional requirements. If no specific regulations can be developed the functional requirement should be reframed as a prescriptive requirement.

13 The United States also notes that consistent language should be used regarding functional and prescriptive requirements in each chapter of part I-A. Functional requirements should consistently be introduced with:

"In order to achieve the goal set out in paragraph X.X.X. above, the following functional requirements are embodied in the regulations of this chapter:"

14 The prescriptive requirements should be referred to by a consistent term, instead of the current variation in terms such as "regulations," "requirements," and "regulations/requirements." Each prescriptive requirement should be expressly linked to a functional requirement, and can begin with "In order to comply with the functional requirement of paragraph X.X.X above..."

15 As noted above, functional requirements in part II-A raise distinct concerns, to be considered by the MEPC, and should be addressed separately.

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

16 The Committee is invited to consider the proposals in paragraphs 11 to 15 and the discussion above and take action as appropriate.