

SUB-COMMITTEE ON SHIP SYSTEMS AND
EQUIPMENT
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**REVISION OF THE CODE OF SAFETY FOR DIVING SYSTEMS (RESOLUTION A.831(19))
AND THE GUIDELINES AND SPECIFICATIONS FOR HYPERBARIC EVACUATION
SYSTEMS (RESOLUTION A.692(17))**

Update on progress and work plan proposals

Submitted by Bahamas, Marshall Islands and IMCA

SUMMARY

Executive summary: This submission informs the Sub-Committee on the outcome of two workshops hosted by IMCA on the revision of the *Code of Safety for Diving Systems, 1995* (resolution A.831(19)) and proposes a strategy for taking this work forward

Strategic direction, if applicable: 6

Output: 6.19

Action to be taken: Paragraph 11

Related documents: Resolutions A.692(17) and A.831(19); MSC.1/Circ.1394/Rev.2; MSC 99/20/9; SSE 5/INF.9 and SSE 7/INF.2

Introduction

1 At the ninety-ninth session of the Maritime Safety Committee (MSC) (16 to 25 May 2018), a proposal was submitted in document MSC 99/20/9 (Russian Federation, et al.) to enhance commercial diving safety by amending the *Code of safety for diving systems* (resolution A.831(19)) (hereinafter referred to as "the Code") and the *Guidelines and specifications for hyperbaric evacuation systems* (resolution A.692(17)) (hereinafter referred to as "the Guidelines") to harmonize them with current industry best practices and achieve the reinstatement of the Code as the minimum standard for diving and hyperbaric evacuation system safety.

2 The Committee agreed to include in its post-biennial agenda an output on "Revision of the *Code of safety for diving systems* (resolution A.831(19)) and the *Guidelines and specifications for hyperbaric evacuation systems* (resolution A.692(17))", assigning the Sub-Committee on Ship Systems and Equipment (SSE) as the coordinating organ (MSC 99/22, paragraph 20.26).

3 Subsequently, IMCA hosted two workshops in London on this matter, inviting interested Member States and industry representatives to participate in order to identify issues which needed to be addressed and to develop an outline of the workplan. This document presents the main conclusions of this collaborative work and a series of proposals on how to carry the work forward under this agenda item.

Aims of the revision exercise

4 The focus of the revision exercise should be:

- .1 strengthening the implementation of the revised Code; and
- .2 addressing the means of evacuation of divers in saturation.

To support the revision task, reference is made to annex 3 to document MSC 99/20/9, which contains a comparison (gap analysis) of current industry guidelines against resolutions A.692(17) and A.831(19).

5 It was recognized that the work required was more complex than was initially envisaged in document MSC 99/20/9 and was more wide-ranging than simply harmonizing the existing Code with current industry best practices. This point is further elaborated in the paragraphs hereunder.

Review of the existing text and key areas to be addressed

6 Despite its age, in general, the existing Code is still applicable and the text is fit for purpose. However, there are several areas where the Code is considered lacking and, therefore, either a new text needs to be developed or the existing text to be revised. Some of the key areas to be addressed are set out below:

- .1 Application of the Code

There is a lack of clarity as to the types of diving systems covered by resolutions A.692(17) and A.831(19). The current Code should not be applied on the basis of whether a diving system is a temporary or a fixed system, as this is not in line with the principles of SOLAS and the paramount goal of the Code is to ensure safety of life at sea during diving operations. Any revision of the Code should clarify that the provisions of the Code apply to all diving systems, irrespective of type.

- .2 Means of escape

One of the key concerns with the existing Code is the lack of mandatory requirements to provide means of evacuation for divers in saturation. Currently, SOLAS provisions are applied in such a way that diving chambers might not be considered as accommodation spaces and, instead, it is assumed that the divers are present in their cabins. With such an interpretation, divers in hyperbaric saturation chambers are not included in evacuation plans and, therefore, the requirements for life-saving appliances (LSA) may be eluded.

When divers are in saturation in the diving chamber, in a situation where abandoning the ship is necessary, it is physically impossible for them to access the survival craft designated under SOLAS. Furthermore, a survival craft can only be deemed "ready for immediate use", if an evacuation system, such as a hyperbaric lifeboat, is available to enable a safe evacuation whilst keeping divers under pressure. Failure to maintain divers in saturation would almost certainly result in death or leave the diver with life-threatening injuries (e.g. brain damage). Such means of evacuation is standard on board specially constructed dive support vessels (DSVs). However, where divers are in saturation on board a vessel other than a purpose-built DSV (i.e. when a vessel not purpose-built to conduct commercial diving operations has later been fitted with a diving system), there may be no means of escape provided for the divers in saturation. In the event of an emergency, these divers are trapped inside the chamber with no means of escape and, therefore, face almost certain death. This is the most critical issue which needs to be addressed in revising the Code.

.3 Hyperbaric evacuation

Once a hyperbaric evacuation unit, if available, is launched, it requires special planning to ensure that life support for divers in saturation is maintained for a minimum of 72 hours in accordance with industry best practices to enable survivors to reach a place of safety. While the current Code provides guidance on this, follow-up has been problematic, as contingency planning requires facilities external to the vessel which cannot be provided by standard search and rescue (SAR) resources. In revising the Code, this aspect should be considered, based on current industry practices which allow for coastal State involvement.

.4 Interpretations of SOLAS provisions and other IMO instruments

It is important to ensure that there are no gaps or shortfalls between the Code and other IMO mandatory instruments. For example, the issue identified in paragraph 6.2 above, i.e. diving chambers being treated as "accommodation", requires clarification as to which requirements should then apply. The Code should provide that clarity to the industry by ensuring that the "chambers" are deemed equivalent to "cabins" and "divers in hyperbaric chambers" are recognized as "crew". SOLAS provisions on escape plans, means of escape, muster points, alarm systems and the LSA Code application to hyperbaric lifeboats are some of the aspects that require clarification.

.5 Required capability of the supporting ship or floating structure

While the current Code refers only to "diving systems", it was agreed that a revised Code should facilitate the safe conduct of diving operations as a whole and take into consideration the required capability of the supporting ship or floating structure. It is envisaged that this can be achieved by referencing relevant IMO instruments and could incorporate aspects such as:

- .1 ship structure and stability (SPS Code and MSC.235(82)); and
- .2 position keeping and dynamic positioning (MSC.1/Circ.1580 or the 2009 MODU Code).

Revision of the Code in a goal-based standard (GBS) format

7 Noting that IMO has increasingly been applying a goal-based approach to the development of new requirements, an integral part of the revision task should encompass

restructuring the Code, in line with the GBS principles set out in the *Generic guidelines for developing IMO goal-based standards* (MSC.1/Circ.1394/Rev.2), based on three main aspects:

- .1 issues related to ships or structures conducting diving operations;
- .2 diving systems, including abandon and evacuation; and
- .3 additional guidance, as needed.

8 Therefore, a draft table of contents is submitted in document SSE 7/INF.2 (IMCA) for the proposed revised structure of the Code, in a GBS format, together with a preamble for illustrative purposes.

Proposals

Guiding principles

9 The co-sponsors propose the following guiding principles for proceeding with the work under this agenda item:

- .1 the existing Code to be updated with current industry practices where it has been identified that it is outdated;
- .2 a new text to be developed to address areas where it has been identified that the existing Code is incomplete;
- .3 the relevant parts of resolution A.692(17)) to be incorporated into the revised Code; and
- .4 given the incentive for the development of goal-based regulations, an integral part of the revision work should consist of restructuring the existing material in line with the GBS format, as illustrated in document SSE 7/INF.2.

Establishment of an intersessional correspondence group

10 Consequently, the co-sponsors propose that an intersessional correspondence group could be established at this session as an efficient way to proceed with the revision of the Code. Draft terms of reference are included in the annex for consideration by the Sub-Committee. The co-sponsors expect that additional time may be needed to complete the work and, therefore, consideration should be given to the extension of the target completion year at SSE 8, if needed.

Action requested of the Sub-Committee

11 The Sub-Committee is invited to consider and endorse the guiding principles outlined in paragraph 9 and the proposal in paragraph 10, and take action, as appropriate.

ANNEX

**DRAFT TERMS OF REFERENCE OF A CORRESPONDENCE GROUP ON THE REVISION
OF THE CODE OF SAFETY FOR DIVING SYSTEMS (RESOLUTION A.831(19))**

1 Taking into consideration the comments made and decisions taken in plenary, the Correspondence Group is instructed to:

- .1 consider key areas to be addressed for revising the *Code of safety for diving systems* (resolution A.831(19)) , based on document SSE 7/14, in particular, paragraph 6 of the document;
 - . 2 develop a draft new Code in the GBS format, by incorporating the relevant parts of the *Guidelines and Specifications for Hyperbaric Evacuation Systems* (resolution A.692(17)); and
 - .3 submit a report to SSE 8.
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