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Proposal to review the Code of Safety for Diving Systems and resolution A.692(17)

Submitted by the Marshall Islands, the Russian Federation, Vanuatu, IMCA and IOGP

SUMMARY

Executive summary:	This document provides information to the Sub-Committee on the need to review the Code of Safety for Diving Systems and the *Guidelines and specifications for hyperbaric evacuation systems* (resolution A.692(17))
Strategic direction:	
High-level action:	
Output:	
Action to be taken:	Paragraph 17
Related documents:	MSC 65/25 and MSC 65/25/Add. 2

Introduction

1 The Maritime Safety Committee (MSC), at its sixty-fifth session, held from 9 to 17 May 1995, recognizing the need for a revised text, finalized a general review of the Code of Safety for Diving Systems 1995, the amendments of which were adopted by resolution A.583(14). Pursuant to paragraph 3 of document MSC 65/25/Add.2, the MSC was authorized to amend the Code as necessary in light of the further developments and experience gained from the implementation of the provisions contained therein.

2 The Code of Safety for Diving Systems was developed to provide a minimum international standard for the design, construction and survey of diving systems on ships and floating structures engaged in diving operations, in order to enhance the safety of divers/personnel. Chapter 3 of the Code states:

> "An evacuation system should be provided having sufficient capacity to evacuate all divers under pressure, in the event of the ship having to be abandoned…"

3 The *Guidelines and specifications for hyperbaric evacuation systems* (resolution A.692(17)) were adopted in 1991 with a view to promoting the safety of all divers in saturation and achieving a standard of safety for divers that corresponds, as far as practicable, to the one provided for other seagoing personnel, and which will satisfy chapter 3 of the Code.

4 Since that time, the industry has made great strides in the provision and use of hyperbaric evacuation systems. New and detailed industry guidelines on hyperbaric evacuation systems have been prepared by the International Marine Contractors Association (IMCA) and by the International Association of Oil and Gas Producers (IOGP). These are contained in the following publications:

.1 IMCA D 051 *Hyperbaric evacuation systems (HES) interface recommendations*;

.2 IMCA D 052 *Guidance on hyperbaric evacuation systems*;

.3 IMCA D 053 *Design for the hyperbaric reception facility (HRF) forming part of a hyperbaric evacuation system (HES)*; and

.4 IOGP Report No. 478 *Saturation Diving Emergency Hyperbaric Rescue Performance Requirements*.

5 It is the view of the co-sponsors that the new industry guidelines should stimulate the re-evaluation and revision of the IMO diving instruments.

Background

6 In all saturation diving situations, there is a risk that an unexpected or unpredictable event will threaten the integrity of the saturation system vessel or location. In spite of the best efforts of this Organization, all ships, including those outfitted with diving systems, could possibly experience fire, collision, or sinking It is probable that sooner or later this will happen to a Diving Support Vessel (DSV) fitted with an inbuilt saturation diving system, or to a barge or vessel of convenience fitted with a temporary saturation diving system.

7 Hyperbaric Evacuation Systems (HES) have been developed to evacuate saturation divers under pressure from a diving system under threat to a place where decompression to surface pressure can be carried out safely. It is essential that suitable hyperbaric evacuation systems are provided for saturation divers as, in the event of an emergency, they cannot be brought to surface pressure quickly. Very rapid decompression of saturation divers will almost inevitably lead to the death of the divers.

8 Modern saturation diving systems can house up to 24 divers. Therefore, there is the possibility that up to 24 people could lose their lives in a single incident in the absence of a suitable HES. Situations where there may be a need to evacuate saturation divers under pressure from a diving system under threat do not arise often. However, when they do, they are invariably very serious.

9 Saturation divers have been killed in the past when they were not provided with suitable means of evacuation and safe decompression from a stricken vessel. In 1991, the **Derrick Barge (DB) 29** capsized and sank in the South China Sea during Typhoon Fred. Four divers in saturation went down with the barge and died. There was no means available to evacuate the divers from saturation, i.e. no suitable Hyperbaric Rescue Unit (HRU) had been provided. In 2005 the **MSV Samundra Suraksha** collided with the Mumbai High North (MHN) platform. An immensely destructive fire ensued, which completely destroyed the platform in

under two hours. The **Samundra Suraksha** also caught fire and was fully abandoned, except for the six divers who were trapped inside the saturation living chambers. The fire on board the ship made it impossible for the divers to reach the hyperbaric rescue unit. The ship was towed away from the platform and eventually the fire was brought under control. After 10 hours, diving personnel managed to board the stricken ship and the six divers then underwent successful emergency decompression. The **Samundra Suraksha** sank the following day.

10 In 2011, the **DSV Koosha 1** sank off the coast of Iran in the Arabian Gulf. A cement silo and other equipment reportedly broke free in stormy weather causing the ship to capsize and sink within a very short period of time. There was insufficient time for the six saturation divers in the living chambers to enter the Hyperbaric Rescue Chamber (HRC) and be launched into the sea. All six divers lost their lives.

11 In addition to the above, there have been a number of occasions when saturation divers have been sent to a HRU in preparation for launching, but ultimately the emergency has been brought under control and launching of the HRU was not required.

12 While there are no guarantees for anyone involved in the emergency abandonment of stricken ships, the simple principle is that saturation divers should be given the same chance, so far as is practicable, as any other seagoing personnel to abandon ship successfully and be rescued.

The need for review of the IMO diving instruments

13 Specific reasons for undertaking a timely review of the IMO diving instruments are as follows:

.1 the Code of Safety for Diving Systems has not been revised since 1995;

.2 the *Guidelines and specifications for hyperbaric evacuation systems* (resolution A.692(17)) have not been revised since 1991;

.3 some important recommendations made in current offshore diving industry guidance produced by IMCA and IOGP are not reflected in the IMO diving instruments;

.4 some of the terminology used in current offshore diving industry guidance to describe HES is different to, or not used by, the IMO diving instruments;

.5 HES are designed to evacuate saturation divers under pressure from a diving system under threat to a place where decompression to surface pressure can be carried out safely. Current offshore diving industry guidelines refer to Life Support Packages (LSP) and Hyperbaric Rescue Facilities (HRF). These are important components of an HES, which are not specifically considered by the IMO diving instruments. The IMO diving instruments take an outdated "get them off and away from the ship" approach to hyperbaric evacuation. They do not properly consider subsequent arrangements for the transfer of divers to a place where decompression to surface pressure can be carried out safely;

.6 current offshore diving industry guidance does not consider the use of a diving bell to be a satisfactory or viable means of hyperbaric evacuation. The IMO diving instruments do not make this clear. In light of this, there is a risk that some diving contractors may plan to use a diving bell as an HRU;

.7 the preparation of written project-specific hyperbaric evacuation plans is now considered to be an essential practice. The term "hyperbaric evacuation plan" does not appear in the IMO diving instruments, and there is insufficient guidance on what should be included in such plans;

.8 diver evacuation from subsea habitats is not considered in the IMO diving instruments; and

.9 the IMO diving instruments are generally outdated and need to be fully reconsidered by modern experts in the field of offshore diving.

15 The co-sponsors intend to submit a proposal for a new output to the upcoming session of the Maritime Safety Committee, to be held from 16 to 25 May 2018, in accordance with 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.5) as well as the *Checklist for considering human element issues by IMO bodies* (MSC-MEPC.7/Circ.1).

Proposal

16 It is proposed that, in light of the developments in international diving industry systems and practices, the Code of Safety for Diving Systems 1995 and the *Guidelines and specifications for hyperbaric evacuation systems* (resolution A.692(17)) should be re-evaluated and revised, as necessary, to ensure that suitable diving systems incorporating appropriate hyperbaric evacuation systems are installed on all ships and floating structures engaged in saturation diving operations.

Action requested of the Sub-Committee

17 The Sub-Committee is invited to note the information provided.