



THE REPUBLIC OF THE UNION OF MYANMAR
MINISTRY OF TRANSPORT AND COMMUNICATIONS
DEPARTMENT OF MARINE ADMINISTRATION
No-363/421, Corner of Merchant & Theinbyu Road,
Botataung Township, Yangon, Myanmar

E-mail: dma@motc.gov.mm, dma.myan@gmail.com
P.O.Box: 194

Tel: +95-1-397640
Fax: +95-1-397641

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Marine Guidance (3 /2019)

SAFETY PRECAUTION FOR ENTERING ENCLOSED SPACE

Applicable to: All Ship-owners, Flag State Surveyors, Port State Control Officers, Recognized Organizations

Summary

The document is guidelines for the implementation of SOLAS Chapter IX (ISM Code) for safety precaution for entering enclosed space on board ships flying with flag of Myanmar.

1. Background

The Republic of the Union of Myanmar is a party to the International Convention for the Safety of Life at Sea (SOLAS), 1974 and its 1978 Protocol. As a member state, Myanmar has ratified the 1988 SOLAS Protocol and deposited the adoption to the IMO on 3 July 2019 which will enter into force on 3 October 2019.

2. Purpose

This marine guidance is to encourage the adoption of safety procedures aimed at preventing casualties to ships' personnel entering enclosed spaces where there may be an oxygen-deficient, oxygen-enriched, flammable and/or toxic atmosphere. The guidance also establishes requirements and elaborates on safety standards that must be followed by personnel entering enclosed spaces onboard ships. These requirements are necessary because lives continue to be lost by personnel entering shipboard spaces. Safety precaution for entering enclosed space shall comply with Resolutions A.1050(27), MSC.380(94), MSC.350(92), MSC.1/ Circ.1581, MSC.1/Circ.1561, MSC.1/Circ.1477 and MSC.1/Circ.1401.

3. Application

- .1 This guidance applies to all Myanmar flagged ships, including Commercial Yachts of 500 Gross Tons (GT) and over.

- .2 All SOLAS requirements for the carriage of Atmospheric Testing Instruments and Drills for enclosed space entry and rescue are fully in place, as follows:
 - .1 *Drills*: The requirements under SOLAS (Regulations III/19.3.3 and 19.3.6), per IMO Resolution MSC.350(92), is for crew member participation in onboard enclosed space entry and rescue drills once every two (2) months.
 - .2 *Carriage of Atmosphere Testing Instruments*: SOLAS Regulation III/19.3.6.2.3 requires that each enclosed space entry and rescue drill requirement includes: "checking and use of instruments for measuring the atmosphere in enclosed spaces." See also SOLAS Regulation XI-1/7, in IMO Resolution MSC.380(94).

4. Requirements

- .1 Safety Strategy (Instruction, Training, and Drills)
 - .1 The importance of regular instruction, training, and drills in the proper methods of enclosed space entry and rescue operations cannot be over-emphasized. In order to maintain a high level of personnel safety measures on Myanmar flagged ships, ship owners/operators must adopt a comprehensive safety strategy to prevent accidents while entering enclosed spaces.
 - .2 The strategy shall give full consideration to the IMO's recommendations for entering enclosed spaces aboard ships contained in IMO Assembly Resolution A.1050(27) and shall be incorporated into the Safety Management System (SMS), as appropriate. Tankers using nitrogen as an inerting medium shall also give full consideration to the guidelines of IMO Circular MSC.1/Circ.1401 while developing their SMS.
 - .3 In particular, the strategy shall be ship-specific, and shall establish safety instructions and training initiatives to emphasize proper utilization of personal safety equipment and procedures. Safety instructions and training shall consider and include a review and briefing of the following primary mistakes made by personnel that have led to casualties:
 - .1 entering an enclosed space without advising other persons of intent;
 - .2 entering an enclosed space without ensuring the space is adequately ventilated; and
 - .3 attempting to enter an enclosed space to give aid to a person or persons inside the space, without first taking the necessary safety precautions.
 - .4 The safety strategy shall also require crew members with enclosed space entry or rescue responsibilities to participate in periodic enclosed space entry and rescue drills to be held on board at least once every two (2) months. Such drills shall be planned and conducted in a safe manner, taking into account, as appropriate, the

guidance provided in IMO Assembly Resolution A.1050(27) and shall include the following exercises:

- .1 checking and use of personal protective equipment required for entry;
 - .2 checking the use of communication equipment and procedures;
 - .3 checking and use of instruments for measuring the atmosphere in enclosed spaces;
 - .4 checking the suitability, including length, of sampling hoses of portable detectors for gas measurement at all levels in double bottom spaces;
 - .5 checking and use of rescue equipment and procedures;
 - .6 calibration of instruments in accordance with the manufacturer's instructions, either on board or ashore (SOLAS II-2/4.5.7.1 and IMO Circular MSC.1/Circ.1581); and
 - .7 instructions in first aid and resuscitation techniques.
- .5 The Master and Safety Officer shall review periodically the safety instructions which have been issued by the shipowner and which shall be available in sufficient numbers on board for all personnel to have their own copy.
 - .6 Every crew member, upon joining the ship, shall be given instructions which shall include, but not necessarily be limited to, the risks associated with enclosed spaces and the onboard procedures for safe entry into such spaces which should take into account, as appropriate, the guidance contained in IMO Assembly Resolution A.1050(27).

.2 Authorization of Entry

No person shall open or enter an enclosed space unless authorized by the Master or the nominated responsible person and unless the appropriate safety procedures laid down for that particular ship have been followed.

.3 Ventilation of Spaces

- .1 Enclosed spaces shall be assumed to be incapable of supporting life and shall be well ventilated naturally or mechanically for a period sufficient to achieve an acceptable level of oxygen as determined by testing before entry into the space may be permitted.
- .2 Testing of the atmosphere of the confined area shall be carried out before any person enters the space and at regular intervals until all work is completed.
- .3 Only if the test results indicate acceptable levels of oxygen and acceptable levels of flammable or toxic vapors, shall entry be permitted. This means that testing must indicate oxygen reading that is no lower than it is outside the space. If the area has a lower content of oxygen than outside the space, the cause of this

difference must be determined in case the oxygen has been displaced by toxic or inflammable gases. Appropriate measures shall be taken to remove the risks.

- .4 It should be emphasized that the internal structure of a space, or liquid residues, may present situations where oxygen-deficient areas exist. Even when an enclosed space has been satisfactorily tested and found suitable for entry, there is a risk that oxygen-deficient areas can exist and precautions must be taken. This is especially the case where the path of supply and outlet ventilation is obstructed by structural members or liquid residues are still present.
 - .5 Oxygen-rich and oxygen-deficient atmospheres both present serious risks. For example, oxygen enrichment will increase the flammability of clothing and other combustible materials. Conversely, a relatively small reduction in the oxygen percentage can lead to impaired mental ability, and can adversely affect those with pre-existing medical conditions, including respiratory infections, asthma, etc. The effects are very rapid and generally there will be no warning to alert the senses. This can happen even in circumstances where only a person's head is inside a confined space. Very low oxygen concentrations can lead to unconsciousness and death.
 - .6 A safe atmospheric range for entry into enclosed spaces shall be included in the ship's SMS. (See also paragraph 7.2, IMO Assembly Resolution A.1050(27))
- .4 Cargo Pump Rooms
- .1 In tankers, the officers and pump technicians shall be alerted to the danger which will arise if liquid cargo leaks from defective pumps or cargo piping systems and floods the pump room bilges to a height which could obstruct the inlets of the air exhaust ducts, thus making the pump room ventilating system ineffective and permitting heavy accumulation of cargo vapors within the compartment.
 - .2 Constant vigilance shall be exercised by personnel on board tankers regarding the asphyxiation and toxic hazards associated with cargo pump rooms if there is any leakage of cargo into the pump room bilges. Such spaces shall be entered only by personnel properly trained and equipped with suitable breathing apparatus for the product involved and the individual shall be secured to a lifeline. Under no circumstances shall the breathing apparatus be removed while within a space containing atmosphere fouled by noxious vapors or gases.
- .5 Breathing Apparatus
- .1 A breathing apparatus of an approved type shall be carried in all ships in accordance with SOLAS Regulation II-2/10.2. Breathing apparatus for chemical

carriers and liquefied gas carriers is prescribed by the Chemical Code and Gas Code respectively, and shall be carried accordingly.

- .2 In all cases where the atmosphere of a space is known or suspected to be unsafe, persons entering such spaces shall only do so while wearing an approved Self-contained Compressed air Breathing Apparatus (SCBA), and all such persons shall be trained in its use.
- .3 Under no circumstances shall an Emergency Escape Breathing Device (EEBD) be used to enter an enclosed space in which the atmosphere is known or suspected to be oxygen-depleted, oxygen-enriched, toxic, or flammable.
- .6 Records

The dates when enclosed space entry, rescue drills, and on board training are held shall be recorded in the ship's log book. If a drill or training session is not held at the appointed time, an entry shall be made in the log book stating the circumstances and the extent of the drill or training session held.



Director General

Department of Marine Administration