

# 海事處

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貴署檔案 Your Ref. : ---

本處檔案 Our Ref. : SD/S 800/9

7 August 2015

To: Shipowners, Ship Managers and Ship Masters

Dear Sirs/Madams,

**Concentrated Inspection Campaign  
on Crew Familiarization for Enclosed Space Entry  
Conducted from 1 September to 30 November 2015**

The Paris and Tokyo MOU will jointly conduct a Concentrated Inspection Campaign (CIC) on Crew Familiarization for Enclosed Space Entry from 1 September to 30 November 2015. Other MOUs may launch the same CIC during the period.

The campaign will target on the compliance with provisions of the applicable requirements regarding Crew Familiarization for Enclosed Space Entry as per SOLAS and STCW on every ship eligible for inspection. The CIC will be conducted in conjunction with the regular port State control inspection. The purpose of this CIC is to ensure effective procedures and measures are in place to prevent seafarers from accident due to entry of enclosed space and recuse operation.

The CIC will verify 5 main areas as follows:

- whether crew members are familiar with the enclosed space on board and location and operation of on board safety system and appliances to be used for enclosed space entry;
- whether crew members responsible for enclosed space emergency duties are familiar with their duties;
- whether there is evidence that enclosed space entry and rescue drills are conducted in accordance with SOLAS Chapter III, Regulation 19;
- whether crew members responsible for enclosed space entry are aware of the associated risk; and
- whether the enclosed space entry and rescue drill performed at the presence of the PSCO comply with the requirement of Regulation 19.3.6 of Chapter III, SOLAS.

Any non-compliance detected in this respect by a PSCO may result in ship detention and issuance of deficiency relating to ISM Code.

To facilitate masters of Hong Kong registered ships in preparing for this CIC exercise, guidelines on Crew Familiarization for Enclosed Space Entry are attached for reference (please refer to Annex I). Your particular attention is drawn to the following actions before the campaign:

- (a) Ship management companies should distribute this circular letter and guidelines to their Hong Kong registered ships and make sure that all shipboard staffs are fully aware of the campaign;
- (b) Ship management companies and/or shipboard staff should also carry out inspections to verify compliance with the applicable requirements at all times, in particular prior to the commencement of the campaign; and
- (c) Ship management companies should further ensure that masters and officers onboard ships could communicate effectively with PSCOs. Poor communications with PSCOs during inspection may lead to the detention of ships.

During the CIC, PSCOs will utilize a questionnaire containing a number of items to be verified during the inspection. The questionnaire has been published on the websites of the Paris MOU and the Tokyo MOU:

<http://www.parismou.org>  
<http://www.tokyo-mou.org>

Please be noted that the two questionnaires are slightly different and one demands more stringent requirement than the other.

If you have any question, please contact Senior Surveyor of the Cargo Ships Safety Section as follows:

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Yours faithfully,

*No signature on website copy*

(P.K. Yeung)  
Senior Surveyor of Ships/Cargo Ships Safety  
for Director of Marine

Encl.

## Annex I

### **Guidelines for Preparation of the Concentrated Inspection Campaign on Crew Familiarization for Enclosed Space Entry for Hong Kong Registered Ships**

#### **Introduction**

The Paris MOU and the Tokyo MOU will jointly conduct the Concentrated Inspection Campaign (CIC) on Crew Familiarization for Enclosed Space Entry from 1 September to 30 November 2015. Other MOUs may launch the same CIC during the period.

#### **Purpose**

The purpose of this CIC is to safeguard seafarers against accident due to enclosed space entry and rescue operation. This CIC is to verify that shipmaster and crew members are aware of the hazards associated with enclosed space entry. They should be familiar with the procedures and their responsibilities for enclosed space entry and rescue drill. All seafarers should be familiar with the arrangement of the ship and the location and operation of their on-board safety systems and appliances that may be used for enclosed space entry. Enclosed space entry and rescue drills should be carried out in accordance with the requirement of SOLAS Chapter III Regulation 19 and properly documented.

#### **Definitions**

An enclosed space has any of the following characteristics:

- Limited openings for entry and exit
- Inadequate ventilation to eliminate unsafe atmosphere of oxygen-deficient or oxygen-enriched, explosive and/or toxic vapours/gases
- Not designed for continuous worker occupancy

It is not limited to cargo spaces, double bottoms, fuel tanks, ballast tanks, cargo pump rooms, cargo compressor rooms, cofferdam, chain lockers, void spaces, duct keels, inter-barrier spaces, boilers, engine crankcase, engine scavenge air receivers, sewage tanks, and adjacent connected spaces. This list is not exhaustive and a list should be produced on a ship-by-ship basis to identify enclosed spaces.

Adjacent connected space means a normally unventilated space which is not used for cargo but which may share the same atmospheric characteristics with the enclosed space such as, but not limited to, a cargo space access way.

Oxygen deficiency means an atmosphere containing oxygen at a concentration of less than 19.5 percent by volume.

Oxygen enrichment means an atmosphere containing more than 23.5 percent oxygen by volume.

Normal air contains 21 percent oxygen by volume.

## References

On board training manual for enclosed space entry and rescue operation  
Revised recommendations for entering enclosed spaces aboard ships-Resolution A.1050(27)  
adopted 30 November 2011  
SOLAS Chapter III, Regulation 19  
SOLAS Chapter III, Regulation 37  
STCW Regulation I/14 Responsibilities of Companies  
Code of Safe Working Practices for Merchant Seamen

**Questions in Questionnaire Guidance with an asterisk indicate Code 30 may be issued.**

## Questionnaire Guidance

### **Q1 Are there measures in place to test the atmosphere of an enclosed space to confirm it is safe to enter?**

There is no mandatory requirement before 1 July 2016 for all ship to carry instruments for measuring the atmosphere in enclosed spaces. However if such equipment is provided on board, the crew should know the use and limitation of the equipment very well.

1. If on-board testing equipment **is provided**:
  - a) The instrument should be suitable for determining the appropriate ranges of oxygen, flammable and specific toxic gases that are expected to be found in the enclosed spaces.
  - b) Valid documented proof should be readily available to show that the instruments have been calibrated for the correct ranges, and the instruments have been serviced in accordance with the maker's instructions.
  - c) The instruments can be demonstrated in working order.
2. If on-board equipment is **not provided**, other suitable measures should be in place. These could include, for example:
  - a) Use of shore-based qualified personnel for testing atmosphere in enclosed spaces before entries.
  - b) On-board procedures that all entries are only carried out by personnel wearing suitable breathing equipment. In addition, no non-explosion proof equipment is carried into the enclosed spaces and ventilation is maintained before and throughout the whole operation.

### **Q2 Are crew members responsible for testing the atmosphere in enclosed spaces trained in the use of the equipment referred to in Question 1?**

If on-board equipment **is provided** and used by crew to test atmospheres in enclosed spaces, the crew members responsible for testing the condition of enclosed spaces should be ready for PSC inspection:

- a) The crew members responsible for determining that is safe to enter enclosed spaces on the ship will be interviewed by PSCO;

- b) The crew members of item a) should have been trained in use of the testing equipment and their training records should be available for inspection;
- c) The crew members would be asked by PSCO to demonstrate the use of the equipment and its calibration prior to use;
- d) The crew members of item a) should be able to answer PSCO about the particular hazards associated with the type of ships and their cargo being carried and the relevant sampling techniques in determine whether the enclosed space is safe to enter;
- e) The crew members responsible for using the testing equipment should be familiar with the maker's instruction and the instruction should be readily available for inspection;
- f) The ship's procedures for enclosed space entry should cover the use of the testing equipment; and
- g) The crew members of item a) should be well aware of the limitation of testing equipment and testing procedures. The persons should realize that the atmosphere in the enclosed space and any space next to it or near it are safe. The persons of item a) are responsible to ensure that the enclosed space continues to be safe while any person is in that space. The responsible crew members should be aware that oxygen content, flammable or toxic gases concentrations may be different throughout the enclosed space and it may not be feasible to measure content and concentrations throughout the entire enclosed space before entry.

**\*Q3 Are the crew members familiar with the arrangements of the ship, as well as the location and operation of any on-board safety systems or appliances that they may be called upon to use for enclosed space entry?**

Seafarers on board should prepare the following:

1. All seafares should know well of spaces on the ship that are identified as enclosed spaces.
2. All crew members should be aware of the on-board procedures for enclosed space entry and are familiar with the entry permit system for access to such spaces. Communications procedures used for enclosed space entry and resuce operation should be included in the procedures.
3. Specifically designated crew should be familiar with the location and use of safety system and equipment that may be used for enclosed space entry and rescue. They are ventilation, lifting and safety harness and other personnel rescue equipment that may be required in an emergency, first aid and resuscitation equipment, gas testing equipment, fire extinguishers, breathing apparatus etc.
4. Specifically designated crew are able to carry out checks on breathing apparatus and correctly don the equipment.
5. All seafarers should be familiar with the on-board emergency systems and equipment as there may be risk of fire or serious injury occurs during enclosed space operations.

**\*Q4 Are crew members responsible for enclosed space emergency duties familiar with those duties?**

Although there is no mandatory requirement of SOLAS to identify enclosed space emergencies on muster list, duties for such an emergency should be clearly assigned. Such duty lists should have been ready and those crew members assigned with enclosed space emergency duties should be familiar with their duties before the voyage begins.

**Q5 Is the training manual available on board and its contents complete and customized to the ship?**

Crew members should be able to locate the training manual. The training manual written in the working language of the ship must be located in crew mess rooms, recreation rooms, or in each crew cabin.

The training manual must contain instructions and information, in easily understood terms and illustrated on safety equipment provided in the ship (i.e. it should not be a generic training manual but is a specific training manual for the ship) and should specifically address enclosed space entry. Any part of such information may be provided in the form of audio-visual aids in the working language instead of the manual.

The on board SOLAS training manual should include instructions on enclosed space entry and emergencies as prescribed in SOLAS Chapter III regulation 25 paragraph 3.17.

**\*Q6 Is there evidence on board that enclosed space entry and rescue drills are conducted in accordance with SOLAS Chapter III, Regulation 19?**

1. The attending PSCO would request an enclosed space entry and rescue drill (refer to Question 9) and the outcome of this question shall be linked to the outcome of the drill. If the drill is not conducted in a safe manner, a deficiency would be recorded.
2. A sample enclosed space entry permit appended to IMO Resolution A.1050(27) can be used as reference on board and completion of the on board permit prior to entry and it would provide evidence that pre-entry checks have been carried out.
3. Enclosed space entry and rescue drills should include, as a minimum, the requirements specified in the regulation 19 of Chapter III, SOLAS:
  - a) checking and use of personal protective equipment required for entry;
  - b) checking and use of communication equipment and procedures;
  - c) checking and use of instruments for measuring the atmosphere in enclosed spaces;
  - d) checking and use of rescue equipment and procedures; and
  - e) instructions of first aid and resuscitation techniques.

**Q7 Have the ship's crew participated in an enclosed space entry and rescue drill on board the ship at least once every two months in accordance with SOLAS Chapter III, Regulation 19.3.3?**

Crew members with enclosed space entry or rescue responsibilities should participate in an enclosed space entry and rescue drill to be held on board the ship at once every two months.

Dates of performing such drills should be recorded in the ship log book as in the case of other mandatory drills, such as boat and fire drills. Should any enclosed space entry and rescue drills not conduct in accordance with the schedule, the reasons of not performing the drills should be stated in the ship log book.

**\*Q8 Are crew members responsible for enclosed space entry aware of the associated risks?**

1. Crew members responsible for enclosed space entry and rescue should know well of the safe levels for oxygen (both oxygen-deficient and oxygen-enriched are dangerous), and the flammable and toxic vapours likely to be found in an enclosed space in relation to their ships.
2. Crew members responsible for enclosed space entry and rescue should be aware that there is a need to test the oxygen contents and flammable vapours. In some circumstances there is also a need to test the toxic vapour such as benzene or hydrogen sulphide.
3. Hazards may be different for different spaces owing to their internal structural arrangements, nature of cargo being carried in the spaces and effect of cargo/water ballast/fuel residuals and tank coating. Such unsafe atmospheres could also subsequently occur in a space previously found to be safe. Unsafe atmospheres may also be present in spaces adjacent to those spaces where a hazard is known to be present.
4. They should be aware of the limitations of testing carried out to verify safe conditions exist in the enclosed space and the need to monitor continually the conditions for the whole duration of the entry.
5. Every crew member should have been given instruction on the risks associated with entry into enclosed spaces.
6. Crew members should be able to identify areas on board that are normally considered to be enclosed spaces and be aware of the need to implement safe entry procedures according to the on-board practices.
7. Crew members responsible for enclosed spaces entry and rescue should be aware that there is a procedure for safe entry into enclosed spaces.

**\*Q9 During the CIC, the PSCO is to observe an enclosed space entry and rescue drill. Did the drill comply with the requirements of SOLAS Chapter III, Regulation 19.3.6?**

The attending PSCO would request an enclosed space entry and rescue drill to be conducted during the CIC. It is anticipated that the drill will take about 20 minutes. The drill is to be conducted in a safe area on the ship and in a safe manner and **it must not be carried out in an enclosed space or any space which has been assigned as such.**

The purpose of the enclosed space entry and rescue drill is to:

- demonstrate that the crew are familiar with the procedures for enclosed space entry and rescue
- verify that crew are able to conduct enclosed space entry and rescue drills competently and in a safe manner, in accordance with the recommendations of the IMO
- verify that crew can communicate effectively during both a planned entry and in an emergency situation

Before the drill is performed, a scenario for a planned enclosed space entry and subsequent rescue should be proposed by the responsible crew members and agreed with the PSCO that is specific to the ship. The set-up should reflect a designated enclosed space on the ship and the hazards related to entry into that particular space.

The following items should be available and demonstrated in the drill:

1. Crew members responsible for the drill should be able to identify the specific hazards of the enclosed space including but not limited to:
  - a) The atmosphere in the enclosed space such as oxygen contents, flammable or toxic gases contained in the enclosed space;
  - b) The tests needed to confirm that entry is safe and will remain safe;
  - c) Any limitations on the ability to confirm that conditions are safe; and
  - d) Any difficulties with access, or matters that may inhibit quick and effective rescue.
2. The on board written procedures should be followed. The stipulated safety briefings are given. The required authorisations (such as entry permits) are completed and sign-offs are obtained. Those crew members taking part of the drill should be identified on the appropriate checklists and authorisations.
3. The personal protective equipment is checked and correctly worn.
4. The communication equipment is checked and in working condition, and communications procedures, including emergency signals, are agreed and tested prior to entry. This should include stationing a crew member at the entry point for the whole duration of the entry, confirmation of entry, monitoring of persons in the space and confirmation of exit.
5. The equipment for testing the atmosphere is checked and in working condition, is suitable for the purpose for which it is being used, is correctly calibrated and has been serviced in accordance with the manufacturer's instructions (see also Question 1).
6. The crew members responsible for testing are competent to use the equipment and any limitations of the equipment (see also Question 2).
7. The results of testing of the enclosed space etc. should be recorded on the permit.
8. The necessary steps are taken to make the space safe if testing indicates that the atmosphere is not safe to enter.
9. The rescue equipment is readily standby and in working condition, and that crew members who have designated rescue responsibilities are trained to use rescue equipment.
10. At the end of the drill all the necessary records are completed and the 'enclosed space' secured, e.g. manhole doors are closed etc.

- The End -