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## Entry into Dangerous Spaces

### Notice to all Shipowners, operators, masters and seafarers

*This notice should be read with the Merchant Shipping (Entry into Dangerous Spaces) Regulations 1988 and Chapter 17 of the Code of Safe Working Practices for Merchant Seamen...*

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#### **PLEASE NOTE:-**

Where this document provides guidance on the law it should not be regarded as definitive. The way the law applies to any particular case can vary according to circumstances - for example, from vessel to vessel and you should consider seeking independent legal advice if you are unsure of your own legal position.

#### **Summary**

This notice provides up to date advice on entry into potentially dangerous or enclosed spaces with recommendations on equipment and training that should be available in light of recent accidents in which crewmen lost their lives. These recommendations are **additional** to the mandatory requirements and guidance in the Code of Safe Working Practices, Chapter 17. The main points are:

- how to identify potentially hazardous enclosed spaces which might not normally be considered as such (with some examples);
- the need to carry personal O<sub>2</sub>/multimeters and how to use them;
- the need to carry out training and drills for entry as well as emergency drills;
- the importance of using EEBD's for individual escape purposes only;
- information on a new MNTB training course for enclosed space entry.

### **1. Introduction**

1.1 Following a number of recent fatalities in enclosed spaces, the DE Sub-Committee of the IMO has set up a correspondence group to review the IMO guidelines on entry into enclosed spaces A.864(20). MCA is contributing to that group and will review its MS (Entry into Dangerous Spaces) Regulations 1988 and Chapter 17 of the Code of Safe Working Practices for Merchant Seamen in the light of discussions and the outcome of that work.

1.2 However, in the meantime the MCA recommends that shipowners take the following safety measures in addition to the statutory precautions. It is likely that these measures will become mandatory for UK ships, if not internationally, within the next few years.

### **2. Identification of potentially hazardous enclosed spaces**

2.1 Several of the recent incidents appear to have occurred because the seafarers involved did not recognise the space they were entering as a potentially dangerous space. Safety Alert 21 (published on the MCA website) highlighted again the factors which make a space a dangerous space. It is recommended that the master and/or safety officer regularly reviews with members of the crew which spaces are, or could in particular circumstances, become

a dangerous space and that crew members are encouraged to make their own assessments and not rely entirely on signage or permanent designations. They should also be assured that they will not be criticised for erring on the side of caution.

2.2 The Merchant Shipping (Entry into Dangerous Spaces) Regulations 1988 (“the Dangerous Spaces Regulations”) states that “all entrances to unattended dangerous spaces on the ship are either kept closed or otherwise secured against entry” and the Master should ensure that such spaces are properly secured. It should be borne in mind that any enclosed space may contain toxic gases or be deficient in oxygen unless it has a regular and continuous ventilation system. Also any space can be contaminated even if it is occasionally occupied due to the operation of machinery within that space (such as a diesel driven fire pump) or by being affected by adjoining unoccupied spaces (such as cargo spaces) or as a result of substances stored there (such as batteries). Some places which fall within the definition of a Dangerous Space may be so only occasionally, perhaps due to the type of work to be undertaken, for example, a compartment during spray painting. A Dangerous Space may not necessarily be enclosed on all sides, for example ships' holds may have open tops but the nature of the cargo makes the atmosphere in the lower hold dangerous. Such places are not usually considered to be Dangerous Spaces but may become so because of a change in the condition inside or a change in the degree of enclosure or confinement, which may occur intermittently. Ship's crews need to be aware of **any** space onboard a ship that has not been opened for some time. Examples of such spaces include:

- accommodation spaces adjacent to or with hold ventilation ducts running through them which are not normally used;
- cargo pump rooms;
- some machinery spaces; such as crankcases, boilers, scavenge air spaces etc.;
- holds and other cargo spaces;
- enclosed tanks; such as double bottoms, fuel tanks, sewage tanks etc.;
- chain lockers;
- void spaces and cofferdams;
- battery lockers;
- some store rooms.

This is not an exhaustive list and awareness of potential risks is necessary for all spaces onboard ship.

### **3. Carriage of O<sub>2</sub>/multimeters**

3.1 The Merchant Shipping (Entry into Dangerous Spaces) Regulations 1988 (“the Dangerous Spaces Regulations”) together with the advice in the Code of Safe Working Practices for Merchant Seamen Chapter 17 require that any potentially dangerous enclosed space is tested before entry. One of the key factors to check is that there is sufficient oxygen to support life (20.8%). If the oxygen level is below this the space must not be entered or should be evacuated. In very low oxygen levels the physiological effect can be acute, after one breath you begin to lose your faculties and can't help yourself.

3.2 The statutory requirement to carry or have available an oxygen or multimeter applies to “each ship on which it may be necessary to enter into a dangerous space”. This includes vessels under 24 metres. If one is not carried on board at all times it would be expected that one is available when enclosed spaces are being entered or a risk assessment supplied to show that one is not necessary. Any testing equipment must be fit for purpose, calibrated and in date.

3.3 MCA strongly advises that all ships over 24m in length, and smaller vessels which have enclosed spaces that seafarers are likely to need to enter, should carry an oxygen meter

on board at all times. It is recommended that meters capable of detecting flammable and toxic gases be made available on vessels where regular inspections of enclosed spaces are likely to be carried out. Also the wearing of personal gas meters is strongly advised for those working inside potentially dangerous enclosed spaces.

- 3.4 Even if normal procedures do not require seafarers to enter enclosed spaces while the vessel is at sea the tragic fatalities when two crewmen lost their lives entering a chain locker demonstrate that unforeseen circumstances may arise where seafarers need to enter such a space.
- 3.5 Personal monitoring equipment is designed for personal use only, to provide a warning against oxygen deficiency, toxicity and hydrocarbon concentrations whilst the wearer is in the space. This should not be used as a means of determining whether a dangerous space is safe prior to entry unless the specific equipment has the necessary additional capability to conduct remote readings.

#### 4. Training and Drills

- 4.1 Under paragraph 17.2 of the Code of Safe Working Practices, a competent person, who should be trained on enclosed space hazard recognition, evaluation, measurement, control and elimination, must make an assessment of the space. Under paragraph 17.6 where testing of the space is required this must be done by a trained person. Under paragraph 17.13 where there is a risk that the atmosphere is unsafe breathing apparatus must be worn and only those trained in use of that breathing apparatus may enter the space.
- 4.2 Additionally the employer is expected to provide any necessary training and instruction, to an appropriate level, for crew members required to enter potentially dangerous spaces. However, at present, there is no explicit requirement for training.
- 4.3 While officer training includes elements on the hazards of enclosed spaces training and emergency drills, refresher training and practice of procedures on board ship will help to ensure that individuals retain awareness of the issue and can react quickly and appropriately if something does go wrong.
- 4.4 It is therefore strongly recommended that training and drills are carried out on all ships not only in rescue from enclosed spaces, as required by the regulations, but also for entry procedures. The spaces used for such drills should be as varied as is practicable and the drill should include an assessment of the space. It is also recommended that real breathing apparatus is used so that seafarers become familiar with the equipment's capabilities and limitations.
- 4.5 It should be remembered that Emergency Evacuation Breathing Devices (EEBD's) are designed for personal use for escape **only** and **should never be used for rescue or space entry. Crew members must be trained in its use and limitations.**
- 4.6 The Merchant Navy Training Board (MNTB) has recently published a new training course on "Entry into Enclosed Spaces" designed for all persons going to sea whether new entrants or experienced personnel. We strongly recommend this course for all seafarers. Details can be obtained from the MNTB website or nautical colleges.

## More Information

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