LP 02/2025 Enhancing Safety Entry into Enclosed Spaces – Key Updates to IMO Guidelines

Enclosed space entry has long been a safety concern for the shipping industry. IMO issued Resolution A.1050(27) in 2011, the *Revised Recommendations for Entering Enclosed Spaces Aboard Ships*, to emphasize safety measures for entering such spaces. Unfortunately, accidents and fatalities have continued to occur.

In response, the IMO's Sub-Committee on Carriage of Cargoes and Containers (CCC) adopted a comprehensive revision of the recommendations during its 10th session in September 2024. The revised recommendations will be submitted for approval at the 110th session of the Maritime Safety Committee (MSC) in 2025, aiming to effectively reduce the risk of accidents in enclosed spaces. Meanwhile, to enhance safety management in enclosed spaces and protect crew lives, the China MSA will launch a nine-month special campaign from January 15 to October 14, 2025, targeting violations related to entering dangerous enclosed spaces.

I. Current situation

1. Persistent fatality trends

According to a report submitted by InterManager to the CCC (CCC9/INF.3) and the latest statistics on enclosed space accidents as of January 2025, a total of 233 accidents were reported between 1996 and 2024, resulting in 356 fatalities—an average of 1.5 deaths per accident. Alarmingly, since the implementation of the revised Resolution A.1050(27) on December 1, 2011, the number of accidents has increased rather than decreased, indicating that the current recommendations are poorly implemented.

2. High-risk roles

Of the 356 fatalities over the past 29 years, 74% were crew members, while 26% were shore personnel. Among crew fatalities, 19% were officers and 55% were lower rank crew members, among whom over 50% were bosuns and able seamen. Nearly 70% of those who died in an enclosed space incident were from a ship's leadership team of the master, chief engineer, chief officer and second engineer, with the chief officer alone representing almost 40%. The high proportion of officer fatalities underscores not only the complexity in complying with enclosed space entry procedures, but also potential negligence among crew members.

3. High-risk areas

Between 1996 and 2024, 83% of enclosed space accidents occurred on bulk carriers, general cargo ships, and tankers, with nearly 80% of these accidents taking place in cargo holds or adjacent spaces. On bulk and general cargo ships, accidents often occurred during the loading of cargo that could deplete oxygen or release toxic gases, while on tankers, accidents were common during tank cleaning. Inadequate control measures at cargo hold entrances and insufficient provision and assessment of cargoes both contribute to the risks.

4. Root causes

All accident investigation reports cite "failure to strictly follow enclosed space entry procedures" as a cause. Specific reasons include:

- Overlooking spaces adjacent to cargo holds, especially when hatches are open – some only consider closed cargo holds as enclosed spaces.
- Commercial considerations: tight schedules may rush crew members to neglect procedures, entering spaces without adequate ventilation or gas measurements, and even entering alone without supervision.
- Lack of warning signs and controls: Many ships lack clear warning signs at enclosed space entrances, particularly at cargo holds.
- Falsified risk assessments and entry permits: while the IMO recommends that the captain or a designated person authorize entry permits, the chief officer often signs them in practice.
- Rescue failures: over 50% of fatalities involve rescuers entering without proper gear.
- Inadequate training: drills often lack realism, leaving crews unprepared.
- Faulty equipment: gas detectors may miss cargo-specific hazards; rescue tools (e.g., air respirators) are often insufficient.

II. Key points in the revised recommendations

1. Clearer definitions

The revised recommendations provide a clearer definition of "enclosed spaces", emphasizing their potential for oxygen deficiency, oxygen enrichment, toxic or flammable atmospheres, and extending the scope to include adjacent and connected spaces.

2. Stricter company responsibilities

The company should ensure that the procedures for entering enclosed spaces are included among the key shipboard operations concerning the safety of the personnel and the ship, in accordance with the ISM Code.

Safety strategies to be adopted include:

- maintaining an enclosed space inventory with risk assessments,
- ensuring cargo data (e.g., oxygen-depleting goods) is shared pre-voyage,
- ensuring sufficient time for enclosed space operations,
- banning solo entry,
- providing certified gas detectors and rescue gear, and
- carrying out regular onboard drills.

3. Enhanced warning signs and control measures

The revised recommendations emphasize clear labelling and physical controls for safe and unsafe spaces, with overall layout diagrams posted at access points to remind shore personnel.

4. Gas safety limits

- Oxygen limits: consider CO_2 and CO concentrations when transporting organic cargo, as these gases may reach exposure limits even at oxygen concentrations of 20.73% or 20.26%.

- Lower CO_2 threshold: from 4% to 0.5% to prevent sudden fatalities.

5. Stricter control of cargo risks

The revised recommendations emphasize the importance of accurate cargo information and provide new guidelines for entering cargo holds and adjacent spaces.

6. Rescue gear clarifications

- EEBDs are not approved for enclosed space entry and should only be used for escape. Proper respiratory protection equipment is required for entry.

- Ships must carry at least two portable gas detectors capable of measuring oxygen, carbon monoxide, flammable gases, and hydrogen sulphide. Additional detectors are required for ships carrying cargo that may produce harmful gases.

III. Advice to Members

1. At the Company Level

- Improve Safety Management Systems: Update enclosed space entry procedures and create ship-specific enclosed space inventories.
- Strengthen Supervision: Use remote technology, regular audits, and on-site inspections to ensure compliance with entry procedures.
- Reduce Commercial Pressure: Consider crew workload and time constraints when signing contracts to ensure adequate time for safety procedures.
- Ensure Accurate Cargo Information: Verify that shippers provide accurate cargo information for proper risk assessment.
- Provide Adequate Equipment: Ensure personal protective and rescue equipment is suitable and regularly maintained.
- Enhance Training: Ensure crew members receive training per SOLAS III/19.3.6, improving their awareness and knowledge of enclosed space risks.

2. At the Ship and Crew Level

- Familiarize with Safety Procedures: Crew members must fully understand and strictly follow enclosed space entry procedures.
- Create Risk Inventories: Develop detailed inventories of enclosed spaces and manage them accordingly.
- Enhance Warning Signs: Clearly label enclosed spaces, especially cargo hold entrances, and post layout diagrams at access points.
- Accurately Assess Risks: Conduct detailed cargo risk assessments with the terminal and provide targeted crew training.
- Implement Safe Rescue Procedures: Rescuers must take full protective measures to avoid additional casualties.
- Adopt Proactive Safety Management: Crew members should shift from passive to proactive safety, refusing unsafe actions and actively participating in safety management.

Conclusion

The revised IMO guidelines prioritize proactive risk management over reactive compliance. Success hinges on cultural change: crews must feel empowered to halt unsafe practices,

while companies balance efficiency with duty of care. By embedding these principles, the industry can turn confined spaces from death traps into controlled environments.

For more information, please contact Managers of the Association.