Achieving tangible safety improvements

by Fitzwilliam Scott

The risks of working in enclosed spaces are well known across the shipping world: seafarers entering such areas can encounter oxygen-deficient/enriched, flammable or toxic atmospheres, with multiple fatalities or injuries sometimes occurring if crewmates find a casualty in an enclosed space, enter that space to effect a rescue and then also fall victim to the same hazard. As maritime regulators address the dangers posed by working in enclosed spaces on board ships, InterManager outlines the core problems and welcomes progress.

InterManager, the international trade association for the ship and crew management sectors, has been collating statistics on deaths and accidents in enclosed spaces since 1999 and reports that during this period, enclosed spaces have claimed the lives of 186 seafarers and 70 shore workers. However, InterManager's Secretary General, Captain Kuba Szymański, fears these figures could be higher still and believes there is under-reporting by shipping authorities.

Capt Szymański explains that a complete overhaul is needed across many aspects of the shipping industry to reduce the risks associated with enclosed spaces aboard ships. In particular, he notes the confusion caused by varying regulations and procedures, "Different regulations define enclosed spaces in differing terms, referring to 'confined,' 'enclosed' and 'dangerous spaces,' while the International Maritime Organization refers to 'potentially dangerous' spaces."

Capt Szymański, an experienced seafarer himself, says this adds to the pressure on seafarers – who are so often blamed for their own injuries or deaths by investigations which don't delve deeper to understand why a mistake was made.

Cutting corners – and lives

In recent years, InterManager has conducted a vital campaign to raise awareness of the problems associated with enclosed spaces. A statistical survey completed in 2021 identified bulk carriers as the most at-risk shipping segment, accounting for some 47% of fatalities, followed by tankers 24%, with 'procedures' identified as the most significant cause in nearly 30% of all accidents. The association identifies some specific safety issues that need addressing as follows.

The so-called 'Australian Ladders' installed on bulk carriers: while not required to be totally enclosed, in many cases, they are. The 'trunk' is open at the top and bottom, and when the cargo hold is full, it will trap any hazardous atmosphere. It may then remain trapped as the bulk cargo is emptied until the bottom access is opened. Using these access ways when the ship is unloading has resulted in many deaths.

Next, Foc'sle stores in some general cargo ships have a door, or other penetration, connecting to the Number 1 Hold. If the door is left open or door seals are damaged, a hazardous atmosphere may migrate from the hold, and a number of deaths have resulted from this.

Third, bulk carrier stool spaces can often be damaged, resulting in a hazardous atmosphere in these adjacent (to cargo) areas.

Capt Szymański also identifies 'time pressure' as a prominent underlying cause of enclosed space accidents. In a paper co-written by Martin Shaw, MD of Marine Operations and Assurance Management Solutions Ltd, he writes, "In recent years, time pressure has become an issue of ever-increasing importance as the demand for 'efficiency' increases. In some 'liner' trades, such as container shipping and car carriers where global production is involved, efficient shipping has facilitated reduced stock-holding costs by 'just in time' delivery of components. This increases time pressure on the ship to deliver these components on time. The COVID epidemic and recent Suez Canal closure shows the risks inherent in a long supply chain and the dependence on shipping to 'deliver' on time."

He furthers, "In the bulk trades, there is also a desire to reduce stock-holding costs and limit overall storage. The difference with bulk ships is that they, generally, operate in 'tramp' trades which may lack dedicated and standardised ports and ships, meaning 'high tempo' operations are more of a risk."

Capt Szymański also notes, "Port operations are a major source of time pressure. Ports and terminals want the quickest turnaround for ships using their facilities because this maximises throughput and profitability. The interactions with port services, stevedores and services the owner requires can make this complex, and often ports will encourage ships to berth or sail in marginal conditions without notice."

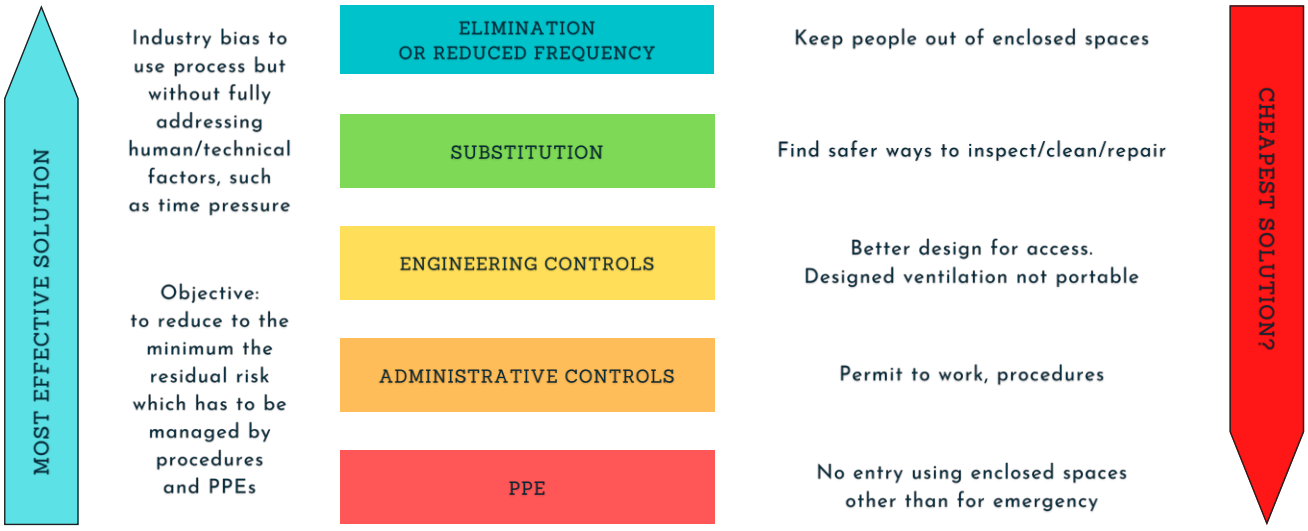
"Time pressure is a real issue in modern operations, as it has been for many years. There is no sign that this is getting less and indeed an indication that it is getting worse. It makes us literally and figuratively 'cut corners,' sometimes with deadly results for seafarers," he says regretfully.

The why's and how's

However, there seems to be a light on the horizon. Regulators are at last moving to try and stem anomalies in current rules that have contributed to this worrying number of fatal accidents involving seafarers and port workers. Following years of lobbying by InterManager and other maritime organisations, the International Maritime Organization (IMO) has now committed to reviewing guidance governing safe working in enclosed spaces on board ships.

Heralding the move as a significant step forward in crew safety, InterManager says it will work with the IMO, flag states, and other maritime partners to ensure lessons are learned from the many fatalities in enclosed spaces and make sure new legislation is workable and effective.

At the 106th meeting of IMO's Maritime Safety Committee (MSC) in 2022, InterManager submitted a comment paper, co-sponsored by many industry partners, in response to China's proposal to revise IMO Resolution A.1050(27), which sets out



the recommendations for entering enclosed spaces aboard ships. InterManager's paper highlighted additional information which it believed should be considered while also providing high-level information relating to enclosed space incidents.

Capt Szymański observes, "This is an opportunity for the shipping industry, led by the IMO, to comprehensively assess the dangers posed by the range of enclosed space and oxygen-depleted areas on board ships and to make meaningful recommendations which will remove or reduce risk, backed up by robust procedures that should aim to ensure no seafarer or shore worker dies while carrying out their jobs."

In its submission, InterManager and its co-sponsors recommend that the IMO Resolution A.1050(27) be considered by suitably competent sub-committees, which should also consider emergency drills for enclosed spaces, the carriage of gas detection equipment on board ships, and MSC.1/Circ.1401 dealing with vessels inerted with nitrogen, plus the associated risks and hazards. It advises re-examining previous submissions to address issues already raised, such as cargo hold gas monitoring and an appreciation of various hazardous cargoes (oxygen-depleting, fumigated, emitting toxic gas).

The submission states, "The scope of the revision needs to be broad and comprehensive in order to take into account both the human element and ship design factors that have contributed to previous enclosed space incidents. This would undoubtedly mitigate against, and hopefully prevent, such incidents occurring in the future."

InterManager's submission highlights a need to consider the design of access as a means of reducing the number of such incidents, pointing out the risks posed by areas such as hold access ladders, specifically the enclosed trunk ladder (occasionally referred to as the previously-mentioned 'Australian Ladder').

InterManager points out that previous submissions on enclosed space risks have discussed "the repetitive systemic nature of the enclosed space incidents," and this is a matter that InterManager has campaigned about, urging the shipping industry to delve deeper into accident investigations to look at the 'why' as well as the 'how.'

The submission draws attention to industry-led investigations into enclosed space accidents, commenting, "These reviews have resulted in the emergence of several distinct themes focussing on; design and construction, gas evolution, movement and entrapment within the ship structure, and the human element prevalent in many enclosed space incidents, such as the rush to rescue a single casualty resulting in the death of many, the disregard of procedures, and local adaptation of unsafe practices. Likewise, it has been identified that, in many cases, ship and shore personnel are subject to time pressure which may result in them rushing or missing checks to meet artificial deadlines, which often results in entry into spaces for which they are not fully prepared. These aspects have resulted in countless casualties where a known breach of procedure (just a 'quick look inside!') in an enclosed space has often ended in further loss of life."

The submission also states, "In order to reduce, indeed halt, such needless loss of life within the complexities and risks of the maritime world, the review of A.1050(27) needs to be comprehensive, in-depth and as wide-ranging as possible in order to encapsulate the breadth of such studies. A new resolution on the recommendations for entry into enclosed spaces would go a long way towards avoiding the unnecessary deaths of seafarers and shore-workers."

All we can do

IMO MSC 106th agreed that the MSC 107th meeting, scheduled for June 2023, will draw up a plan for revising IMO resolution A 1050/27 concerning Enclosed Space Entry Procedures. Responsibility for the output will be spear-headed by the Sub-Committee on Carriage of Cargoes and Containers (CCC), which next meets in September 2023, in association with five other IMO Sub-Committees, as and when requested by CCC, with a target completion year of 2024.

Capt Szymański concludes, "I sincerely hope that we are finally making real progress towards achieving tangible safety improvements for enclosed space working. Of course, in an ideal world, we would revise our ship designs to remove these spaces altogether – but for now, we must do all we can to ensure that seafarers, stevedores, and other maritime workers do not die while carrying out their duties on board our ships." ■

InterManager

Since the late 1980s, ship management has been an important industry in its own right. It was this which drove the need for an association to represent ship managers and to provide a forum for the global ship management industry to ensure best practice procedures and sustainability. Representing over 5,000 vessels and over 250,000 seafarers, InterManager speaks for ship and crew managers, as well as represents associated organisations globally. Visit **intermanager.org** to learn more.