

Fire on Water

Shipboard fires are still the most dangerous threat to life and property at sea.

According to the TT Club, an insurance and risk management services provider, major shipboard fires aboard container ships occur every 60 days on average. When these fires occur, they have the capability of becoming a massive conflagration resulting in a significant loss of life and property.

To highlight this problem further, commercial vessels travel on the open sea often quite far from land. Making matters worse, shipboard fires can occur within cramped spaces below deck, which can magnify the heat of the fire. It is not uncommon for shipboard fires to have temperatures over 1,000 degrees Fahrenheit, which is more than enough to consume weaker metals like aluminum.

If a shipboard fire burns that hot, it will be difficult if not impossible for crew members themselves to extinguish the fire. In all likelihood, a ship will have to rely upon its fixed CO₂ firefighting system to put out the flames. If a ship's fixed firefighting systems cannot immediately put out the fire, then it may take weeks to get the fire under control. This is exactly what happened earlier this year on the *Maersk Honam*, when a fire resulted in five fatalities on the ship with a capacity of 15,226 TEUs (20-foot equivalent units). And in 2012, the *MSC Flaminia*, a 6,732 TEU container ship, was a constructive total loss and the fire caused three fatalities and seriously injured two.

The industry has responded by calling for improved regulations and ship design. For example, the International Maritime Organization amended Chapter II-2/10 of the International Convention for Safety of Life at



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Sea to increase the effectiveness of shipboard firefighting equipment and systems. This change applies to all new construction on or after Jan. 1, 2016.

With respect to firefighting systems aboard existing ships, certain industry groups—such as International Union of Marine Insurance (IUMI)—have called for upgrades. For example, IUMI has asked that the industry consider a proposal from the German Insurance Association which has called for at least two fixed firefighting systems in critical below-deck spaces, such as the hold walls, major bulkheads, hatch covers, the main deck and the cargo itself. The activation of a fixed CO₂ system can temporarily starve a fire of oxygen, but in order to prevent reflash and the fire spreading, especially into the crew and engineering spaces, a water-based fixed firefighting system should be retrofitted to maintain vessel cooling.

The industry is also examining existing regulations and practices for the handling and stowage of all dangerous goods. For instance, Maersk, the world's leading container line, is adopting a set of principles—Risk-Based Dangerous Goods Stowage. This guideline is to consider the location of particular cargoes in order to minimize the risk to crew, cargo, environment and vessel in the event a fire develops. Stowage of dangerous cargo next to crew accommodation and the main propulsion plant has the lowest risk tolerance, whereas stowage on deck fore and aft likely will have the highest.

These are just a few of the measures to be considered by the shipping industry to reduce and otherwise mitigate the risk posed by shipboard fires. It is likely that as time goes on further measures will be considered to hopefully eliminate this sea hazard.

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