LANCES AND NAILS

You may never have come across water mist lances and nails but their use is growing in popularity and the International Maritime Organisation is even introducing requirements for all new container ships to carry them. Bettina McDowell of the International Water Mist Association emphasises their growing popularity in some high-profile applications.

In a nutshell a water mist system operates at low, medium or high pressure (12.5-120 bar) spraying tiny water mist droplets that quickly take away the heat and the oxygen from the fire triangle. Water mist leaves no residue and its accompanying cooling effect prevents re-ignition.

Water mist extinguishing equipment comes in many shapes and sizes from water mist lances, nails, guns and fire extinguishers to larger mobile or fixed units – very much in the same mould as the type of extinguishing equipment traditionally used by municipal and industrial fire brigades, either integrated in fire trucks or stowed within them.

The stowed gear may include the so-called 'Schnellangriff-Set', or 'Rapid Attack Kit', which is the size of a gym bag and weighs 11 kilograms. It is often used to fight fires in hot, narrow areas and when speed is of the essence. A major benefit of the Schnellangriff-Set is that it can be used to fight fires indirectly – from outside or an adjacent room – thus keeping the firefighter at a safe distance. 'The kit includes thin hoses and a Kombinail which has been developed for indoor firefighting and can be driven through window frames, doors and walls,' explains CEO of the German company Fognail, Lars Tober. 'In case of a roof fire, the fire ladder can be extended, the firemen can put the nails in place and then come down again to enjoy a cup of tea.

'Water mist nails can also be used to extinguish fires that break out underneath the canvas of lorries. Instead of using masses of foam, one to three Fognails can do the job quite easily. A Fognail can extinguish a car fire within about 40 seconds.'

All fire brigades in the northern German city of Rostock have been equipped with water mist firefighting devices – and that includes many of the voluntary units. Some carry the rapid attack kit mentioned above, others use an integrated water mist system that has been standardised for performance.

The first-response fire trucks in Frankfurt Airport – Germany's number one airport in terms of passenger numbers – also carry water mist extinguishing equipment. And it's not just the initial response trucks that carry them, but also many of the smaller emergency response trucks in the airport. According to Lars Tober the demand for water mist extinguishing equipment is not confined to Germany, with many enquiries also coming from the USA and Canada.

Another application that is seeing a call for this technology is the marine sector, where the International Maritime Organization (IMO) has introduced new requirements for fire protection. Container ships that are constructed on or after January 1, 2016 will be required to carry water mist lances on board. The regulation defines a water mist lance as consisting of a tube with a piercing nozzle which is capable of penetrating a container wall and producing water mist inside a confined space (container, etc) when connected to the fire main.

The German shipping company Hamburg Süd already complies with the new rules and all its container ships are equipped with Fognails. They were put to the test when the charcoal in two containers on board the Santa Rosa caught fire at the beginning of 2014. The crew was able to put out the fire with the help of the Fognails and the attending fire brigade confirmed that the fire had been extinguished and that it had not spread to other containers or areas. 'Cuxhaven Fire Brigade had to accompany the vessel into the port of Hamburg, but had nothing more to do,' explained Lars Tober. In Hamburg Süd's case, the lances used low-pressure water mist at 6-7 bar (84 to 98 psi), which corresponds to the pressure on the pumps on fire trucks. The water consumption of this kind of lance is about 60 litres per minute, which makes water mist a cost-effective, environmentally friendly extinguishing technology that not only does not contribute to global warming and is harmless to humans.

More information on water mist can be obtained at the 15th International Water Mist Conference which will be held in Amsterdam 28-29 October 2015. For more information visit www.iwma.net

The Kombinail has been developed for indoor firefighting and can be driven through window frames, doors and walls.