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MARINE AND SHIPBOARD FIRE FIGHTING **IFJ**

THE IMPACT OF FOAMS IN MARINE & SHIPBOARD FIREFIGHTING

Marine firefighting techniques have steadily improved over the years and the capabilities of firefighting foams used to extinguish these fires have dramatically improved as well, reports Robert E. Tinsley.

In 1978, a collision occurred between the ATLANTIC EMPRESS and the AEGEAN CAPTAIN off the coast of Trinidad and Tobago. The fire aboard the AEGEAN CAPTAIN was smothered using drilling mud while the ATLANTIC EMPRESS was ordered by authorities to be towed to sea where an extinguishment attempt could be undertaken. Despite significant efforts from two of the foremost salvors in the world at that time, SMIT (The Netherlands) and Bugsier (Germany), as well as assistance from Mobile Shipping & Transportation Company, the crude oil fire could not be extinguished and the vessel sank. In 1979, the BURMAH AGATE collided with merchant vessel off Galveston, Texas, resulting in a major crude oil fire. The fire aboard the BURMAH AGATE took 63 days to extinguish. More than half of the oil cargo was saved, water pollution was minimised and the effort was defined as a 'success'.

In March 1994, the tanker NASSIA collided with the bulk carrier SHIPBROKER in the narrow Bosphorous Straits, off the coast of Istanbul, Turkey. The resulting fire aboard the NASSIA was of enormous proportions. The NASSIA was carrying 98,600 tons of highly flammable Russian light crude oil. Again, SMIT TAK responded and was faced with a number of obstacles. In addition, a major pollution disaster appeared imminent.

Upon inspection, it was revealed that an enormous irregular shaped wedge had been cut into the NASSIA's bow upon impact. The unusual dimensions of the damage and the tremendous heat generated by the fire caused Lloyd's of London to predict that it would take



March 1994, the tanker NASSIA on fire.

at least 10 days to extinguish the fire, if it could be extinguished at all. Unlike marine fire responses in the past, this time SMIT TAK was prepared to use a new-generation extinguishment foam with unique capabilities. Once the NASSIA was towed into the Black Sea and stabilised, SMIT TAK immediately began its foam attack using PYROCOOL FEF. The stabilisation and extinguishment of the NASSIA took only one day. The extinguishment phase was completed in 12 minutes, using only 9-55 gallon drums of PYROCOOL FEF. Approximately 80% of the NASSIA's cargo was salvaged. It is hard to imagine that in less than 20 years we have seen the time of extinguishment drop from 63 days to a single day.

"Using PYROCOOL, we were able to kill the Nassia fire far quicker than might otherwise have been the case. Without the use of PYROCOOL, the NASSIA could have continued to burn for several days more, with an ever growing risk of bad pollution through structural failure", said Geert Koffeman, SMIT TAK's manager.
 ROBERT TINSLEY



Mulsispray systems for engine room spaces have been used and are very effective but large quantities of water are required.

Some companies have developed high-pressure water fog sprinkler systems, which have a high cooling effect using comparatively small amounts of water.

Tests have shown that the present effectiveness of high-pressure water fog sprinkler systems decreases markedly with deckheads of more than 5 metres. This, of course, can be overcome by more pipework covering localised applications. The U.K. will allow fog application as the first means of attack but require a secondary back up such as carbon-dioxide.

P. & O. / Stena Ferries of Dover have decided to fit both systems - i.e. Marioff fog and carbon-dioxide - to their engine rooms. If a fire should develop on one engine, water fog can be applied whilst the other engine can, hopefully, be used for manoeuvring. Fogtec has been fitted to the galley fat pan fryers.

Release of a Carbon-Dioxide system means that all power is lost until the space has cooled down prior to inspection and subsequent ventilation, which could take many hours. Other administrations may allow a fog system as the primary means of fire extinguishment for engine rooms or pump room spaces.

ABOUT THE AUTHOR

Captain John Abell, MNI, A.M. Inst. Fire Eng. served his apprenticeship at Warsash and at sea with Blue Star Line on worldwide trading. He rose to the rank of Chief Officer on cargo and container ships and then joined Commodore Shipping of Guernsey, C.I., and served as Master for five years on their container feeder vessels to the Channel Islands, Portugal and the Mediterranean. In 1980 he joined the Warsash Maritime Centre as a Lecturer in the Ship Simulator and Manned Model facility. For the last 17 years, however, he has specialised in all aspects of emergency training especially in the area of maritime firefighting. He is a Member of the Nautical Institute and Associate Member of the Institute of Fire Engineers.



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