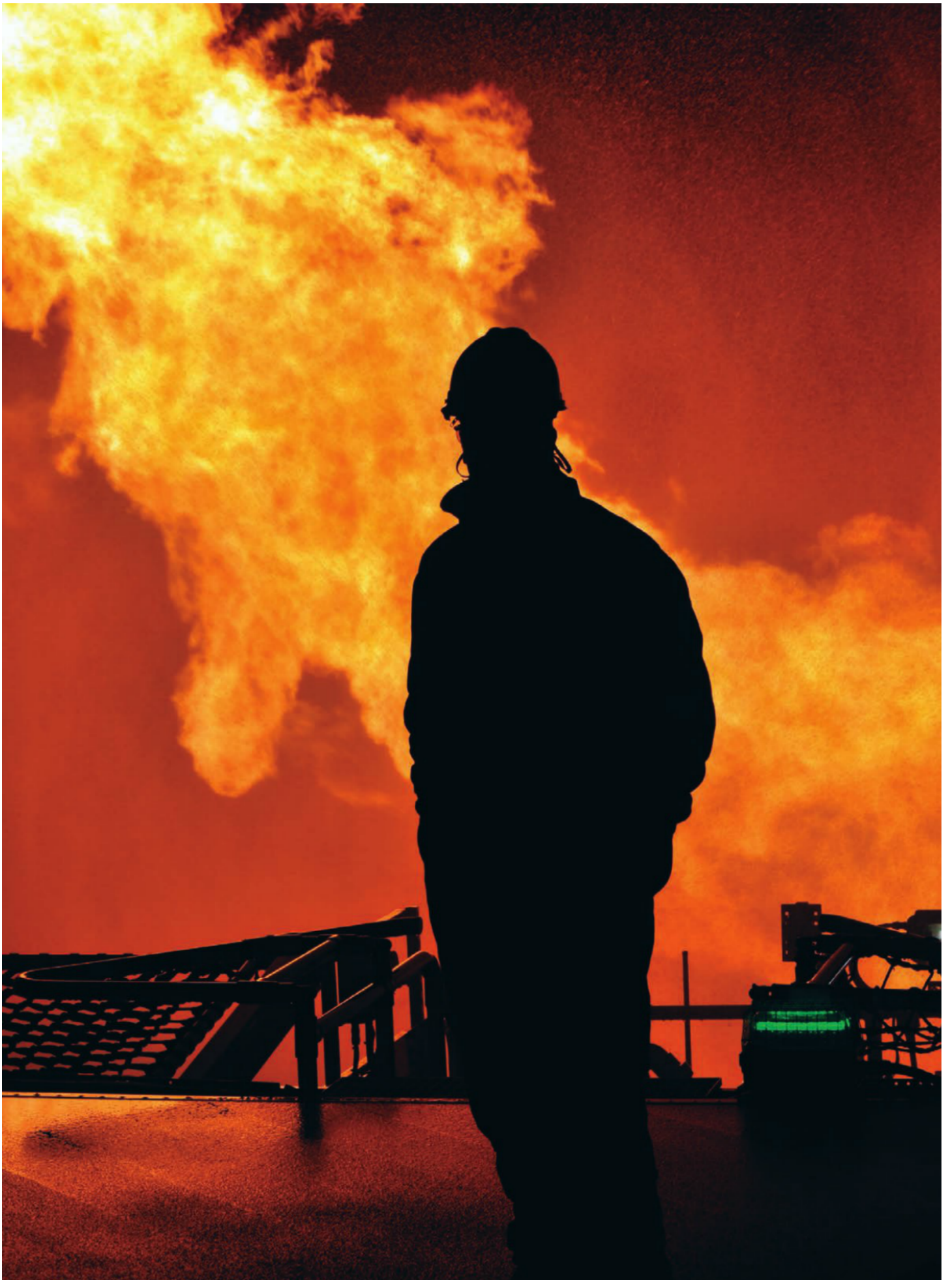


# Fire Aboard!

BY TOM PETERS

**I**t can be as small as a burning piece of paper in a cabin trash can or as devastating as the *Deepwater Horizon* disaster of 2010. Fires are the scourge of the marine industry and particularly devastating in the offshore oil and gas arena, where one spark can instantly create a costly and sometimes fatal situation.



## THEY CAN HAPPEN AT ANY TIME. CAN THEY BE PREVENTED?

And regardless of how prepared you are, they still happen. The U.S. Bureau of Safety and Environmental Enforcement has reported that, in the three years following the Deepwater Horizon tragedy in the Gulf of Mexico, 348 fires and explosions occurred at offshore drilling sites in the GOM and off California.

### IDENTIFYING DEFICIENCIES

The U.S. Coast Guard conducts safety inspections of offshore platforms, rigs and supply vessels to ensure their compliance with both international safety standards like the Mobile Offshore Drilling Unit Code and U.S. offshore safety regulations. Yet last April Coast Guard Rear Admiral Joseph Servidio stated at an industry forum that his service continued to find numerous safety problems on rigs and vessels. He added that 60 percent of offshore supply vessels and half of mobile drilling units did not have a safety management system.

"The issues described by Admiral Servidio a year ago persist," said Captain Joshua Reynolds, USCG District 8 Prevention Division Chief in New Orleans. "In fact, the most serious safety deficiencies, which require the Coast Guard to apply an 'operational control' that suspends operations until the deficiencies are corrected, are on the rise." He said that 14 controls were issued for all of 2014 but 25 so far in 2015.

"The common theme is that a small percentage of vessels appear to have critical system degradation and safety management failures," he added. "For example, primary lifesaving/firefighting equipment is not serviced at the minimum interval or

shows signs of lack of maintenance, and the crew does not appear proficient in system operation."

### TRAINING PROGRAMS

The good news is the industry wants to be better prepared. Kirk Richardson, Director of Maritime Training at the Texas A&M Engineering Extension Service (TEES), says there is growing demand for emergency response training offered by TEES's Emergency Services Training Institute (ESTI), which includes a marine component. The marine firefighting program was initiated when tanker operators and oil companies like EXXON, Texaco and Chevron "came to us and requested a marine firefighting program. We built a ship mock-up and have been teaching shipboard firefighting since 1976." Richardson is confident the crews he teaches, whether on drilling rigs, production platforms, staff accommodation modules or support vessels, are all well-trained and capable.

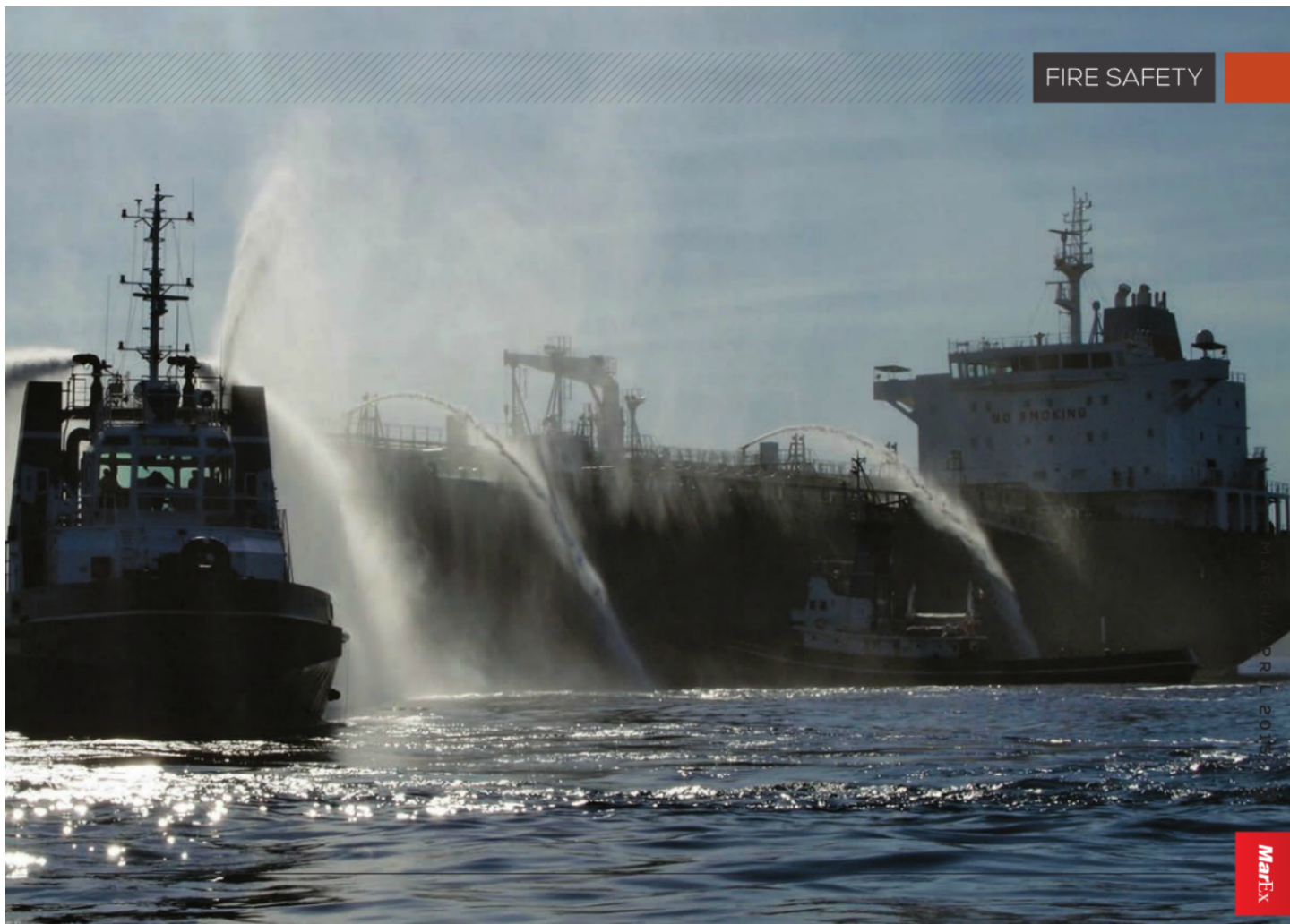
They have to be.

"You can't call 911 and expect the Fire Department to be there in four minutes," he quips. "So the crew becomes the emergency response team. And when an emergency happens a crewmember takes off one hat and puts on another. He becomes a firefighter if it is a fire emergency."

The training program is much less extensive than for a professional firefighter but it does provide the basic tools. The crewmember has to know how to combat different types of fires plus how to stay safe. "Whether it's an interior fire, a cabin fire or a fire on deck," Richardson explains, "he has to understand the







risks involved, the limitations of his equipment, and how to make the right decision. He has to know what kind of agent to apply to what type of fire and how to apply it safely and effectively.”

Fortunately, the seafarer/firefighter is not the only resource available. There are built-in fire suppression systems on ships, rigs and platforms plus fire-resistant bulkheads and fireproof doors. The suppression systems could be water sprinkler systems, foam, CO2 and things of that nature. Training programs teach the basics of such systems. Some are automatic, but many are manually operated. The crew has to know how to operate them and the dangers involved. “A CO2 system can be very effective but also very dangerous because it can extinguish a life just as easily as a fire,” Richardson said.

In addition to onboard systems, many workboats and supply vessels that support offshore drilling projects are equipped with specialized firefighting and safety equipment, including water and foam cannons.

## PRODUCTS THAT PERFORM

Richard M. Casale, President of Beele/CSD Sealing Systems in the U.S., says there are challenges in designing products that reduce risk and increase safety: “The main challenge is to develop products that perform when disaster strikes. It’s easy to pass fire tests and pressure tests in a laboratory today, but to ensure their performance tomorrow, next month, next year and next decade is an entirely different matter. Our systems are artificially age-tested to demonstrate that there will be no loss of fire protection or seal-

ing properties even after 20 years of service in harsh conditions.”

Another challenge is the mindset in the marketplace that a class society type approval is good for everything. Not so, he stresses: “A class society type approval is good only for the application that was tested, nothing more. Sadly, there is little consistency between one manufacturer’s approvals from different class societies and also between different manufacturers’ products within the same class society. The end result is that these systems oftentimes are not installed as tested and may not perform properly when needed most, in a disaster.”

To avoid such problems, Beele issues detailed installation drawings that have been stamped by the class societies and made part of the approvals. The installer and surveyor are assured that Beele products are being installed as tested and will perform when needed.”

Another of the company’s innovations is the RISE (Rubber Insert Sleeve Expanding) system. Casale explained that, “The ‘legacy’ systems used to seal cable penetrations are all based on 50-year-old technology. Beele Engineering addressed all of the drawbacks seen in shipbuilding and offshore installations over many years and designed products that address and overcome all of these issues. There were no tangible improvements in cable penetration seals until Beele introduced the RISE system.”

George Hunter, Director of Sales for Coltraco Ultrasonics in the UK, a maker of fixed and portable monitors for fire protection and suppression systems, also noted the challenges involved in the installation of fire systems: “A few years ago, conventional



CO2 systems were the go-to option for the vast majority of builds. They are a convenient and well-suited solution, being relatively low-cost and able to easily build in redundancy. However, they have negative aspects such as the volume of cylinders needed and their danger to human life in the event of discharge."

As a result, especially in the oil and gas industry and on some specialized vessels, there has been an emergence of higher value clean agent systems. "These different agents are challenging for technology such as ours," Hunter explains. "However, we have the advantage of extensive experience, having operated across a number of market sectors including land-based fire protection, power generation and telecoms that have used these agents for many years. As such, the transition to offering the best solution to our customers in marine was easy as we already had the experience in place."

The new, higher value systems are not without their challenges, however. "Smaller volume discharges of agents can result in much larger issues as, overall, much less agent is used," Hunter says. "The assets being protected in many cases are higher value as well. So we developed a constant monitoring solution known as the Permalevel® Multiplex, which allows 24/7 supervision of all critical fire systems and the ability to integrate these signals into any facility management system. In the event of any minimal discharge, instant alarms can be triggered to alert the facility."

Gary Handwerk with US Fire Pump in Ocala, Florida, a company involved in the manufacture, design and sales of fire-

fighting apparatus, says there has been an increased demand for marine fire pumps due to a push by oil companies and the Coast Guard to meet safety standards. He said the pumps, which can be adapted to fit workboats, barges and supply vessels, can pump water at a rate of over 10,600 gallons per minute.

## KEEPING CURRENT

Michael Donovan, Director of Marine Business Development for The Hiller Companies in Mobile, Alabama, experts in fire detection and suppression for the offshore industry, says keeping current with firefighting equipment in an ever-changing industry means staying current with regulatory change: "If you keep current with the regulations it forces you to stay current with the technology."

Donovan says participants in the offshore oil and gas industry are doing their part to maintain safety standards, including fire protection. "The regulations are all minimum standards," he explains. "And when you are required to follow regulations you do the minimum required. You could always do more to have a greater level of safety, but it's unusual for people to do more. That's true, I think, across the spectrum."

He added, however, that standards in the U.S. are typically pretty high to begin with and, while gaps in safety might occur "on a micro level," he wouldn't be prepared to tar the whole offshore industry with the same brush.

MarEx

Tom Peters is based in Halifax, Nova Scotia.

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\*Subject to mutually agreed upon terms and conditions of a written lease. All Real Estate Brokers or Agents shall be considered agent of, and sole responsibility of, the Tenant.

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