

INDUSTRIAL FIRE JOURNAL

FOR PROFESSIONALS PROTECTING LIVES, ASSETS AND INFRASTRUCTURE WORLDWIDE

First quarter 2018 issue no.111

www.hemmingfire.com

Strength in numbers

Collective emergency response for Sohar Port

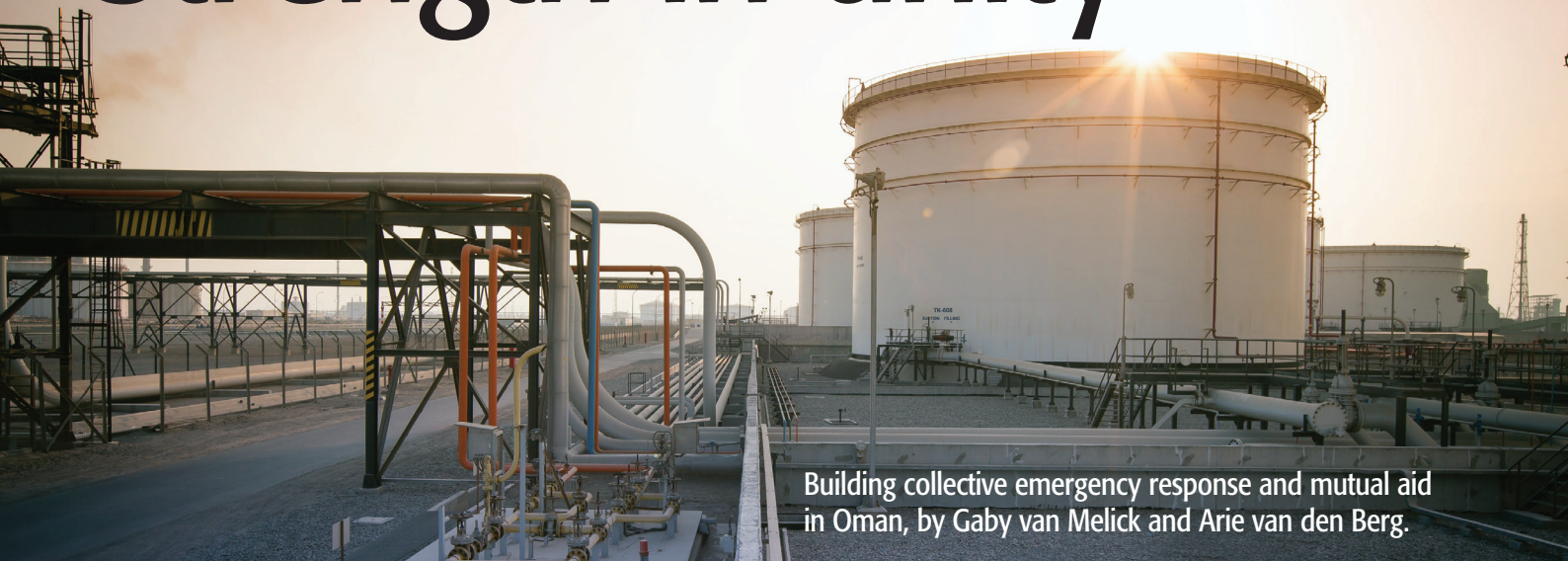
Life sciences

London's Natural History Museum
achieves milestone in fire-risk management





Strength in unity



Building collective emergency response and mutual aid in Oman, by Gaby van Melick and Arie van den Berg.

With the Emergency Response Upgrade Programme having framed an ambitious vision of safety, work is now underway to implement a system of collective emergency response at the Port of Sohar in Oman.

Sohar is a deep-sea port that belongs to one of the fastest growing port and free zone developments in the world. Around 230km northwest of Muscat, Sohar Port and Freezone is strategically located outside the Strait of Hormuz and within major global trade routes between Europe and Asia. It is home to logistics, petrochemicals, metal and food clusters that feed downstream industries with iron and steel, plastics and rubber, ceramics and chemicals; over one million tonnes of sea cargo are handled each week, and over 2,600 ships a year. Not only will it soon be home to the country's first terminal dedicated to the handling of agricultural bulk, but also to an expanded refinery, with Oman Oil Refineries and Petroleum Industries (Orpic) increasing its capacity at the port from 120,000 to 180,000 barrels per day.

Sohar Port and Freezone is managed by Sohar Industrial Port Company (SIPC), a 50:50 joint venture between the Port of Rotterdam and the Sultanate of Oman.

To advance the provision of high-quality emergency services to an unprecedented, future-proof level, Sohar is currently creating a collective emergency response organisation that covers the entire port. This structure is to be

backed by a system of mutual aid for large incidents, using valuable lessons from other mutual aid systems all over the world, most notably the Unified Industrial and Harbour Fire Brigade in Rotterdam.

The project is supported by the Rotterdam-Rijnmond Safety Authority and Centre for Industrial Safety and its partner Kappetijn Safety Specialists. It started because it had gradually become apparent that industrial growth in the Sohar Gateway was exceeding the progress of the establishment of scalable safety infrastructure.

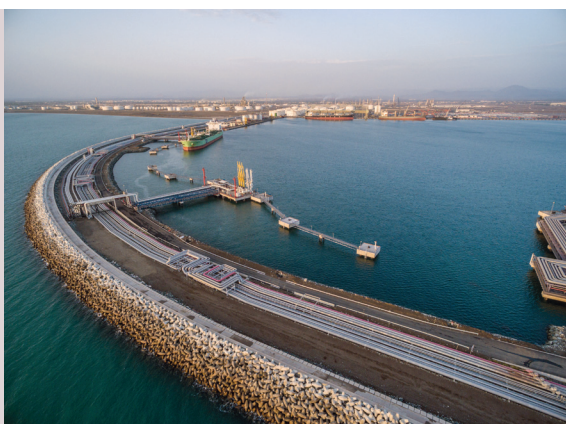
Following two notable incidents, the Orpic fire incident of April 2013 and the Sohar scrap steel fire incident of May 2014, a government committee had assigned Sohar Port and Freezone with providing a solution, and to upgrade the level of industrial safety for the Sohar area, and by extension other areas in Oman.

As SIPC is a joint venture that includes the Port of Rotterdam, there was a natural close cooperation and knowledge exchange with the Dutch authorities specialised in industrial safety. A first step was bringing in experts from the Port of Rotterdam Authority and Rotterdam Safety Authority, to jointly provide a series of comprehensive expert reports with a wide range of recommendations.

The result was the Emergency Response Upgrade Programme (ERUP) in 2014, which aims to set up a sustainable framework for regulated safety, integrated risk management and reliable emergency response in the Sohar industrial port area, scalable to serve future growth and fit other areas in Oman. The main resolutions to be adopted to improve the level of industrial safety were presented to, and approved by, several government bodies in 2015. It was also decided that ERUP should serve as the blueprint for the development of industrial safety management systems in other national ports. Currently, however, all energies are focussed on Sohar.

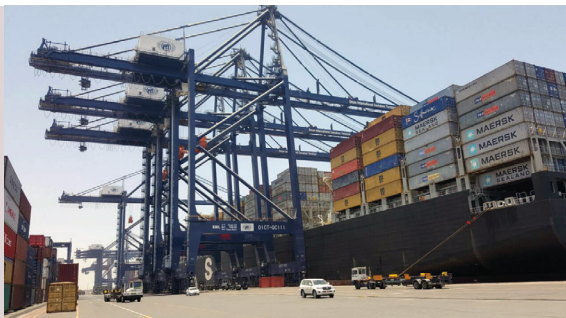
Since 2015 several quick wins have been realised, such as periodic audits based on a Seveso format and the execution of various exercises and drills in the harbour. The time had come, however, to take a leap and address the port's suppression issues in a holistic manner. The aim is to reduce

As well as fuel products, the refinery in Sohar produces significant volumes of naphtha and propylene, which serve as feedstock for an adjoining aromatics and polypropylene plant.





Over one million tonnes of sea cargo are handled each week at Sohar Port.



fragmentation and create true operational strength, especially as regards large industrial incidents, whilst also addressing each company's credible risks.

In part driven by the adoption of the best-practice principles of Seveso III, some companies on site already had their own dedicated mobile emergency response capacity to address incidents. The only refinery in the port, Orpic had been thoroughly investing in its firefighting capacity over the last few years. Oman has no specific law concerning industrial safety, with National Civil Defence resources focused on building/vehicle fires, traffic accidents and rescue operations. While true industrial emergency expertise and related equipment are scarce, especially near Sohar, Oman's Civil Defence is formally designated to respond to incidents in the port's common area and to provide back-up for large incidents.

The safety programme recognised that as an industrial port, Sohar required a strong emergency response capacity built around an integral risk profile of the entire port area; one with a deep understanding of the origins, development and impact of industrial incidents, and of the corresponding requirements for experience and specialist equipment.

To meet the special demands Sohar is building a high quality, cost-efficient, two-fold, scalable system. At its core there will be a joint port emergency-response organization located within the port, providing reliable and quick first-strike capacity for all incidents throughout the port. Sohar Emergency Response Organisation (SERO) will have sufficient capacity to independently handle the majority of incidents, those relatively limited in scale, which are roughly estimated at 95%. The organisation will be tasked with handling the credible, normative scenarios of the companies in the port, as per the companies' risk profiles, and as such equipped with a variety of specialist high-capacity vehicles and equipment, and staffed by responders thoroughly schooled in the local context as well as industrial incident response. In contrast to the other member companies Orpic, which holds the largest risk profile in the port by far, will retain its resources, as they are tailored to its extraordinary scenarios. Orpic will receive back-up through SERO, in a similar model to that used in

Rotterdam's refineries, and reciprocate with back-up for SERO when necessary.

For the few incidents where SERO's resources are not sufficient, Orpic together with Civil Defence will form a mutual-aid system that will be used to meet the requirements of large and prolonged incidents.

Crucial to the new system is that the mutual aid agreements drafted include much more than just a tacit agreement to 'help each other out'. The aim, instead, is to create a solid, well-rehearsed system with uniform standard operating procedures covering alarm and dispatch; command and control; scaling; uniform communications; and protocols. Expertise, vehicles, equipment and staff should also be interchangeable to ensure proper interoperability, as an effective collective response is not (only) about abundant resources, but about allowing different ER organisations to properly connect. Strength comes through numbers and unity.

Tasks, vehicles, equipment, PPE, and training of the responders are being designed to fit the integral risk profile of the port. One strategically placed emergency response station will provide guaranteed ER capabilities in the port within six minutes. The station is to be manned by a dedicated six-person fire-fighting crew and a two-person EMS crew; it includes a small emergency call and dispatch centre with an operator on call 24/7 to process incoming emergency calls and alarm the required operational units.

To address the port's broad variety of industrial and non industrial incidents the station will be equipped with an ambulance to provide direct emergency medical care and transport to the nearest hospital/care facility; a high-capacity fire truck (8,000l of water, over 4,000l of foam); a general purpose fire truck (pumper) to provide standard firefighting and rescue capabilities; a hazmat vehicle; and a tank trailer with foam in supplement for more specialist industrial incidents involving dangerous substances; hazmat/chem-suits to provide additional protection alongside standard protective clothing and PPE. The availability of foam-equipped tugs combined with training in maritime firefighting and rope rescue will also enable emergency response at incidents taking place on vessels and the shore-sea interface, as well as in confined spaces or at great heights/depths.

Additionally, a duty officer will be on call 24/7 to provide the required coordination in case of large and complex or prolonged incidents. Equipped with his own vehicle, he will have a 15-minute response time, outside office hours.

Teams of no less than six crew members are to be used, either six to man the pumper truck, or two to man the industrial truck with the remaining four firefighters manning the pumper truck in back-up capacity. The same principles will apply to incidents that require the hazmat vehicle or tank trailer.

As intimate knowledge of each member company and site is crucial to deliver high-quality response, a close interaction between SERO and all member companies will be required. This will include sharing information on individual sites and processes, the substances handled, their risks, scenarios, and the safety provisions. This facilitates the creation of plans of attack, disaster plans etc to handle the normative scenarios per site. While the main response station includes a training ground for small technical exercises, whenever possible the ER personnel will train throughout the port. Yearly, each mutual-aid member site will host six fire-fighting exercises and three extensive orientations, topped off with an annual drill involving gas/fuel and objects at an external hot-training site. More importantly, quarterly large-scale exercises involving all mutual-aid partners will test collaboration

THE AUTHORS



Gaby van Melick is a consultant in the field of emergency and crisis management at Kappetijn Safety Specialists, specialising in helping public and private organisations prepare for larger incidents and crises.



Arie van den Berg is an experienced duty and hazmat officer in the Safety Region Rotterdam-Rijnmond as well as a senior employee, industrial safety, specialising in emergency response.

An intimate knowledge of each company's site is crucial for achieving a high-quality emergency response.



processes.

Regarding the structure of SERO, Sohar authorities and companies will govern the new response capability; the execution of the required services will be outsourced to a specialist service provider. While the latter carries all liability, Sohar Industrial Port Company will monitor the key performance indicators and the execution of the service level agreements, infrequent deliberation with a tenant committee. The service provider ensures the high-quality performance, even in the start-up phase, through a mix of experienced foreign, industrial firefighters and related personnel, and locally knowledgeable firefighters and personnel. Knowledge build-up and transfer will be an integral part of phasing out foreign employees.

The contribution model is shaped by the principle of solidarity mixed with a risk-based component; all participants pay a basic fee with an add-on depending on the risk profile of each company. Thus, in the end, companies with a higher risk-profile will pay more.

As regards the future, it is worth bearing in mind that the value of scalable, collective emergency response is not geographically limited to Sohar Port. Provided the operational strength remains sufficient, response time standards are being met, and additional fire stations are built, vehicles bought and education for speciality tasks is followed, SERO could provide emergency response services to neighbouring companies as well as the entire Sohar Gateway. It would also enable increased operational strength to fight large incidents, benefitting the region as a whole as well as the individual companies in it.

When it comes to mutual aid/public-private partnerships, as proposed here, a major challenge is that the close cooperation required, in the end, boils down to relationships and trust between the intended partners, as well as long-term commitment. It's about sharing responsibilities, organising together, governing together and paying together.

Parties need to get to know each other because there is a dependency on others and in the system. Neighbours must trust each other enough to come to each other's aid when necessary, and to the extent that no additional resources are required individually. It's not about creating surplus capacity by investing more, but about pooling individual resources for more quality and capacity for less.

Such trust, close interaction and mutual understanding is not a given, especially between diverse parties that might also have partially differing interests. It takes time and commitment to build.

An important cornerstone in the process is agreement upon the contribution model: how to allocate costs over different partners.

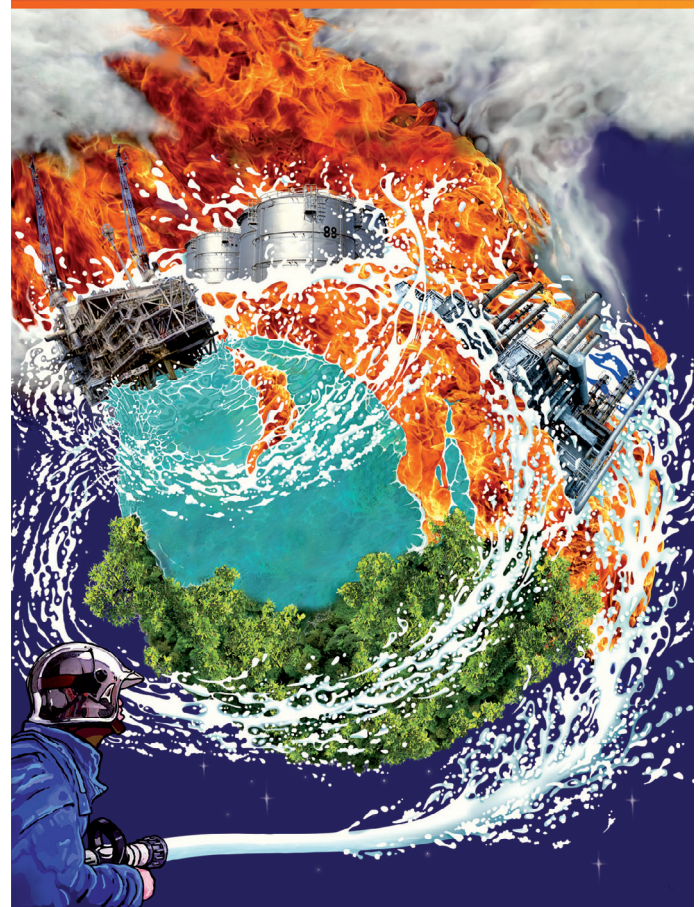
When building but also when maintaining the PPP, even when circumstances change (eg partners enter or leave, risks or stationary provisions change) there needs to be continuous commitment to the contribution model.

Summarising, in close deliberation with – and support from – the local stakeholders, Sohar is building a strong, collective emergency response system that honours the risks and interests inherent to an industrial port. No more fragmented incident response by individual companies, but a system that greatly furthers the safety level of the integral port and its direct surroundings. Measuring up to international standards and best practices, the system is scalable, transferable, and capable of providing a showcase structure for other Omani industrial areas.

As of January, there is an underlying master plan specifying the main concept for the emergency response system to be built. The next steps are getting all parties to sign a memorandum of understanding and to get on with actually creating SERO and the mutual-aid system. The latter two will be done by appointing a project officer that will further develop the system proposed, mainly the soft requirements, and draft the tender.

The draft MOU states that the aim is for SERO to become operational in two years' time.

High performance fire-fighting FOAMS for fire professionals



PROFOAM

INTERNATIONAL

PROFOAM INTERNATIONAL
22, Av. René Coty - 75014 Paris - France
Tel: +33 1 44 08 66 56
Email: profoam@profoam.fr
web: www.profoam.it