

Ras Laffan trains virtually

VectorCommand has released a specialised marine vessel firefighting scenario for its “Tactical Command Trainer – Fire” virtual reality training system. Qatar Petroleum recently adopted VectorCommand’s virtual reality system for training its emergency response staff at the giant Ras Laffan LNG facility in Qatar.

Firefighting in marine vessels demands special skills and knowledge due to the unique conditions created by metal hulls, fuel, cargos and confined spaces. To help enhance the command skills of firefighters in regions with ports and shipping, and in response to strong fire and rescue service demand, a specialised marine vessel scenario has been developed by Vector Command, the command training and technology company.

The marine vessel fire scenario works within the company’s “Tactical Command Trainer – Fire” virtual reality and artificial intelligence-based fire command training system, a system that is used for firefighter training across a wide variety of common fire scenarios by almost all UK fire and rescue services, as well as other services around the world.

Using the “Tactical Command Trainer – Fire” system, commanders enter a virtual environment and using their observation; command; and firefighting skills, move around the fire ground and deploy virtual crews and assets with a joystick and by verbal commands implemented by an exercise facilitator.

The system mimics the behaviours of different types of fires and smoke, shows firefighters deployed outside a fire scene or inside a building actively firefighting (wearing breathing apparatus), and has realistic response times for additional fire engines requested from fire stations. Different outcomes (some catastrophic) follow different decision-making paths, depending on the actions taken. The intention is to expose inexperienced commanders to the real stresses of incident command and to encourage and reinforce clear, safe command analysis and decision-making skills.

Each student session is recorded automatically and can be replayed for review with an experienced trainer. This is a key

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benefit of the training methodology employed around the "Tactical Command Trainer – Fire" system. Command decision-making can be run through and assessed at leisure, in a private, non-threatening tutorial-style environment and in groups, where decisions made (and the decision-making reasoning behind them) can be discussed, lessons learned from virtual mistakes and possible improvements suggested. Each individual candidate's performance within a scenario is automatically recorded and improvements, strengths and weaknesses can be retained as part of a firefighter's training record.

All scenarios within the system, from industrial buildings to high rise apartments and domestic houses, are designed to work within the established fire and rescue service command doctrine, known as the Incident Command System. Operational concepts such as spans of control and sectorisation of an incident ground are all built into the system's core functionality.

One of the most recent new groups of scenarios developed for the system is the oil and gas storage and transport scenario package adopted by Qatar Petroleum for training its emergency response staff at the giant Ras Laffan LNG facility.

Qatar Petroleum, one of the world's largest liquefied natural gas and oil exporters, chose the VectorCommand system to support the company's ambitious expansion plans for developing its gas and oil reserves and LNG tanker fleet, with associated requirements for training of crisis responders.

The two products selected are the "Tactical Command Trainer – Fire" system for tactical training, and the "Training and Exercising" system (for training and exercising operational crisis responders and systems throughout an organisation).

Qatar Petroleum will initially use the two virtual reality-based

training packages to prepare commanders for dealing with large tank farm fires and for fighting fires on LNG tanker ships. As part of the Qatar Petroleum contract, senior system developers and customer-support staff from VectorCommand travelled to Qatar where they worked closely with local Qatar Petroleum personnel on product and scenario customisation (creating complete new virtual reality "worlds" showing the LNG storage facilities, LNG berthing and loading facilities and localised virtual vehicles) as well as for staff training and familiarisation.

One of the many benefits of adopting a virtual reality-based approach within an integrated fire command training system is that command at both the tactical and operational levels can be combined within exercises with a high degree of realism. The scenarios incorporate simulation of typical activities specific to oil and gas fires, such as drenching systems and foam blankets.

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