

Virtual Reality Preps Crews for High-Risk Ops



In the Incident Configurator tool that VSTEP made for the Port of Rotterdam authorities, an instructor can configure an incident to his preference. He can choose from three ship types, set the location (inside the harbour or on open sea), and set some weather conditions like wind direction and force. Students subsequently experience the incident from a viewpoint of an incident response ship. In a classroom, they discuss the best way of attacking the fire.



Crews operating in high-risk environments rely on their training to operate effectively and save lives. However, it is precisely in these environments that realistic and effective training is often difficult, dangerous or costly. Fairmount's safety training subsidiary, VSTEP, helps maritime and offshore companies prepare their crews for the unknown.

The U.S. military also faced this dilemma and found the solution in virtual reality simulations. Rapid advances in computer gaming technology, have given rise to a new generation of realistic non-entertainment applications. These "serious games" as they are

called, focus on delivering better ways of learning, allowing people to experience life-like situations.

How Does it Work?

The software runs on a standard PC. A realistic 3-D model of the actual working environment forms the basis of a virtual experience for trainees. The 3-D environment can be an exact replica of a geographic area, needed for military training, but also a vessel, oil rig, industrial plant, tunnel, or train.

Within the virtual environment, incidents are simulated including any element of a real situation, such as fire, smoke, panic or casualties. The trainee experiences these incidents as if he was actually there, and must respond to the situation as he would in real life. Using the mouse or joystick, he is free to move around, make decisions, communicate with others and take appropriate action. The trainee is directly confronted with the consequences of his decisions.

As a result of powerful visuals, active participation and direct feedback, people learn faster and remember procedures better. Being able to repeat incident scenarios over and over, shapes behaviour and develops competencies.

Virtual Reality Supplements Practical Training

The key benefits of virtual reality simulations are the ability to realistically experience an incident situation over and over again, the interactivity and the

low cost. Serious games are unlikely to replace real-life practical training 100 percent, but they allow trainees to train specific decision-making skills and experience situations before real-life training. This makes the real-life training more valuable and cost-effective. For example, training Helicopter Landing Officers on offshore installations to take appropriate action in emergencies is dangerous and costly. Allowing them to practice different landing scenarios in a virtual environment before going out to experience

extinguishing a real helicopter, makes the practical training more effective.

VSTEP develops custom training courses for emergency services, ship owners, offshore operators, port authorities, hospitals, military and training institutes. Recent projects include:

- Incident configurator for the Rotterdam Port Authority. Instructors configure an incident on the PC: in different parts of the harbor, vessel types, incidents, weather types, etc. Port safety crews then take over and need to demonstrate what actions they would take.

In VSTEP's recent Office Emergency Response training, people experience incidents like a fire. They need to decide what's most important: ring the alarm bell, call the company safety officer, send the staff to the assembly point, or kill the fire him- or herself.



In VSTEP's virtual fire-fighting training for the Royal Dutch Navy, people play the role of Officer of Duty or Scene Leader in a realistic on-board incident. The Scene Leader has to instruct the fire-fighting crew, and communicate with the Officer of Duty in the Machinery Control Room.

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- Fire fighting training for the Royal Dutch Navy. Fire is 'core business' for the navy, but realistic training exercises are difficult and expensive. VSTEP has developed a training environment that allows crews to simulate emergencies onboard. Crewmembers assume their fire team roles and need to take action as they would in real life.

- Company Safety Officer (BHV).

Training Company Safety Officers to evacuate colleagues, extinguish small fires and apply first aid is trained in simulated incident scenarios.

The application of virtual reality training based on gaming technology is rap-

idly gaining pace. Applications have focused on high risk environments where training is essential but difficult, dangerous or costly. The right combination of game-based virtual reality and practical training is likely to result in

courses that will prepare crews operating in high risk environments more effectively.

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