

## Vortex Simulators Power OETIO's Enhanced Training Programs

### ► The Company

The **Operating Engineers Training Institute of Ontario (OETIO)** operates two world-class facilities in Canada, offering crane operator, heavy equipment, and construction safety training programs.

### ► The Situation

To augment its training offering, OETIO needed multiple simulators modelled after actual heavy equipment, in rugged, flexible, and portable configurations. They wanted to increase student capacity and throughput, reduce wear and tear on expensive equipment, and decrease accidents in the field by safely training operators to deal with hazardous scenarios.

### ► The Solution

Since Vortex delivered its first crane simulator, OETIO has repeatedly ordered new models and extra features. To date, OETIO employs six fully loaded Vortex simulators in various configurations. These state-of-the-art training environments provide OETIO's student operators with the most realistic operational experience outside a construction site.

### ► The Results

OETIO's Vortex simulators provide an immersive and cost-effective solution for implementing rigorous, standards-based heavy-equipment training. They include authentic crane models, controls and behaviour, 3D worksites, interactive learning and more, providing the ideal high-fidelity environment for building enhanced operator skills while reducing equipment maintenance costs.



In the past, hands-on heavy-equipment training could only be conducted in the machine, one-on-one with an experienced operator. The **Operating Engineers Training Institute of Ontario (OETIO)** recognized that there were significant limitations to this type of training. For example, only one student could be trained at a time, on a limited number of scenarios. Bad weather further restricted training possibilities, and students could not train after-hours or alone. As well, novice operators put a significant strain on equipment and controls, which led to increased costs and disruptive breakdowns.

To address these issues and to extend student training opportunities, OETIO sought to augment its training regimen with highly realistic heavy-equipment simulators. After a long search for a suitable partner, OETIO asked the Vortex team to develop and deliver a suite of turnkey crane and construction equipment simulators.

OETIO selected the **Vortex**-based solution due to the team's longstanding success in the visual-simulation and gaming industries – and as a renowned provider of specialized engineering services. OETIO was especially impressed with Vortex's feature-rich simulation tools, which set the industry standard for interactive 3D dynamics, and by the team's talent for simulating mechanical equipment behaviour. OETIO employs Vortex tower, mobile, and crawler crane simulators, as well as concrete pump simulators, in its training program.

### Real Equipment and High-Fidelity Dynamics

Powered by Vortex, each simulator comprises advanced physics-based behaviour, precise equipment specifications, high-resolution 3D computer graphics, actual hand and foot controls, wide-screen HD displays, a head-tracking system, and accurate environmental effects like ambient sound, shadows and time-of-day/ weather conditions.



“Ensuring the best qualified crane operators demonstrates due diligence for reducing costs associated with accidents and liability, and for reducing costs from damages and repairs, while boosting productivity and related profits. Vortex simulators contribute to all of the above.”

Gerry Hughes, Director,  
OETIO

## About Vortex

Vortex expertise and technology put high-fidelity behaviour in motion in applications for training simulators, mission rehearsal, serious games, virtual prototyping and testing. Vortex customers include Honda, John Deere, L-3, Lockheed Martin, NASA, Carnegie Mellon University, and over 100 other leading companies and academic institutions.

## Numerous Training and Cost Benefits for OETIO

The Vortex simulators deliver substantial benefits for OETIO and its student operators. Controlled simulation scenarios allow trainees to set up worksites, operate equipment properly and safely, react to equipment problems or failures, work in difficult, obstruction-filled environments, and perform emergency procedures – excellent preparation for real-world challenges.

Targeted, worksite-specific training and mission rehearsals lead to higher-skilled operators, reduced training times, increased safety, and lower equipment maintenance costs. The Vortex simulators provide OETIO with the utmost in training flexibility and allow its trainers to systematically record, play back and evaluate student performances.

“The opportunity to train in an effective simulation significantly increases the hours of hands-on experience our students acquire in a safe, controlled, realistic, and responsive environment,” stated Gerry Hughes, OETIO Director.

And the OETIO–Vortex partnership continues to thrive and evolve. Recent Vortex features added to the OETIO simulators include tower crane erection/disassembly, tandem lifts of massive loads, signaller training features, and self-guided training scenarios with textual, visual and audio cues.



Vortex tower crane simulator allows operators to prepare for day-to-day tasks such as fly-forming, steel erection and concrete-bucket pouring.



Vortex crawler crane simulator prepares students for dual-line operation with jib, plus clamshell, dragline, and even pile-driving operation.



behaviour in motion

