

## SAIT Training Program Engages Student Operators with “Transformational” Vortex Simulators



As Associate Dean at the Southern Alberta Institute of Technology (SAIT) Polytechnic in Alberta, Jim Szauner has seen all kinds of student operators. For some, heavy equipment operation is a calling. For others, it's an opportunity that's knocking at the right place and time. And for others, it's an intimidating, back-against-the-wall prospect.

"This might be the first time some students are coming back to school in a number of years," says Jim — "their secondary experience might not have been super positive, so they might not have a lot of confidence coming in to the postsecondary environment." In the case of these students, the Vortex™ Simulators are part of a "transformational experience" that Szauner believes is central to the SAIT experience. "Once they get on the Vortex Simulator," Jim says, "and gain the confidence that they can do it, it's actually quite amazing to watch — they surprise themselves and do far better than what they thought they were capable of."

In late 2015, SAIT launched its crane simulator laboratory, which serves as the centerpiece of the Polytechnic's crane and hoisting training and apprenticeship program. The lab is comprised of eight Vortex Simulators pre-loaded with learning content, including Vortex Training Modules for mobile crane, lattice boom crane, and boom truck operations.

"You can see, for some students there is actually a global change in attitude," Jim says, "from feeling that options are sort of limited to the sense that doors are actually opening up."

### The Company

The Southern Alberta Institute of Technology (SAIT) Polytechnic is a Canadian leader in postsecondary education, with nearly 220,000 alumni in 76 countries, more than 2,600 faculty and staff, and 84 day-time programs and 37 apprenticeship programs.

### The Situation

SAIT was looking for immersive training simulators for its new crane simulator laboratory.

### The Solution

Vortex Simulators are providing SAIT Polytechnic with a sophisticated training tool that boosts student confidence and prepares them to operate the real thing.

Another key teaching resource in the lab is the group of Vortex Signaller Stations that students use to practice signals with operators conducting blind lifts in the Vortex Simulators. "We can definitely accommodate a larger class size," says Jim, "but it's not a matter of having more students for the sake of more students — it's the ability to engage more students which is really important to us."

SAIT blends lab training with training on the actual equipment, which means the experience of training on the simulator has to blend seamlessly with operations in the field. Jim says that with the Vortex Simulators, students can transition directly to training on the actual equipment. "I put crane operators with years of experience on the Vortex Simulator. They came back to me after working at it and said yes, that feels like a real crane."

In fact, the immersiveness of the Vortex Simulators was the key selling point — not just for SAIT, but for the entire ecosystem of stakeholders involved in working with SAIT's new and future trainees. "We talked to instructors, we talked to industry, we talked to crane operators ... We didn't want to buy something and then turn around to find out it wasn't going to be used."

They all said the same thing: If the simulation didn't feel real, the training just wasn't going to be effective. "The simulators had to be immersive," Jim explains. "The student has to feel actively engaged in the training exercise — the graphics, the feel, the operation of the system all had to be real-world quality. With the physical feedback provided by the Vortex motion platform, there was another important component we felt would help immerse the students in the training exercises."

The realism of Vortex Simulators is powered by CM Labs' Vortex simulation software. This software simulates the real behaviour of cranes, rigging, cables, and loads, validated against empirical and engineering data. Vortex Simulators also track and log performance metrics, such as the amount of time elapsed in a training exercise, the amount of fuel used, pendulums, collisions, failure to protect others on the worksite, and more. Each simulator is a complete learning solution in its own right.

"The tangible benefit for the instructors," Jim says, "is that it gives them a very sophisticated tool they can employ at their discretion. We have the ability for one instructor to supervise twelve students, and keep them all engaged lifting and learning, whereas in the field it would probably take the equivalent of two or three instructors to supervise that same size of group."

Some companies use Vortex Simulators as an employment pre-screening tool for crane operators, to screen out candidates who may not have the hand-eye coordination or general aptitude to operate heavy equipment. Jim Szauner, however, is experiencing almost the opposite effect — and it looks like SAIT's crane and hoisting training and apprenticeship program is going to be a very popular draw for some time to come: "I brought my entire management and administrative teams out to experience the Vortex Simulators," he says, "and the folks who did that fell almost instantly in love with cranes and crane operating!"



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