A Model Program

Stanly Community College, Albemarle, N.C.

Students can train on simulators in both classroom and mobile lab environments in the Heavy Equipment Operations program at Stanly Community College.

Stanly Community College is nestled in south central North Carolina and boasts the state's leading heavy equipment operations program at the community college level. The two semester education and training program provides entry level trade knowledge and technical skills focused on construction and industry safety, construction tools use, equipment controls and techniques, construction math, site materials knowledge, basic computer skills and civil engineering basics. As part of the overall training program, state-of-the-art heavy equipment simulators are included for training students before they hit the outdoor lab to train on actual machines.

State Leader

Ed Gann, Career and Technical Education Director with Stanly Community College remembers his first exposure to Cat® Simulators. He attended the Southeastern Regions Cat Dealers meeting as a guest of Carolina Cat, a Caterpillar dealership, where the simulators were featured. He attended with four earth moving professionals and several others from the college. The demonstrations were eye opening. "We all came away that afternoon beginning to see the benefits of simulator training," said Gann.

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Stanly Community College was ready to take on the concept of training in the heavy equipment field using simulators. Gann and the others began to develop a program. The first step was to bring in Carolina Cat, whom Gann had a solid working relationship with. Gann researched other equipment programs and could find only an occasional use of simulators. “Our goal is to train people in the field of heavy equipment operations with a well rounded curriculum,” said Gann. In order to do that, several related subjects are covered during the program.

An advisory committee was set up consisting of construction company owners, heavy equipment sales reps, technical support personnel and other local and regional industry leaders. They were asked their opinion of the potential program before final development—and they were skeptical. Overall Gann heard the same thing: that there was no way a community college could turn out someone with all of the equipment skill of a veteran heavy equipment operator. Gann called the committee together to explain his vision for the program and by the end of the meeting, everyone was on the same page. Advisory members began to share their vision of what the graduate would look like, describing ideal operator candidates as those who understand and respect all aspects of safety in the heavy equipment industry; those who are familiar with math beyond what they learned in high school; those who know basic machine care and will listen when the machine is “saying” something isn’t right.“Teaching operators to catch a $500 repair today can help avoid a $10,000 repair tomorrow,” states Gann. Advisory members also embraced including a drug screening policy in the college program. Gann relates that construction industry personnel managers “don’t even want [operators] getting to us if they aren’t serious.” Gann shaped the program based on this feedback from community leaders and his own personal goal of turning out equipment operators who are “ready to go to work every day.”

A Program Takes Shape

The first heavy equipment operations class began in August 2009, thanks to grant funding for the simulators. The two large wheel loader simulators, three hydraulic excavators and the mobile simulator unit were all funded by the Golden Leaf Foundation (North Carolina). Students study math and safety, learn how to read construction drawings and learn basic computer skills, among other subjects in the

Stanly Community College uses its mobile training unit to provide demos and market the school’s heavy equipment operations program around the state.

curriculum. Students then spend many hours working between the simulators and the outdoor lab running the actual machines. The lab is on a 12-acre site built in partnership with the local Air National Guard. Simulators play a large role in the training curriculum for many reasons, including saving on fuel costs and the obvious safety features. Students can make mistakes while learning on simulators, thereby saving wear-and-tear on the actual machines or hurting themselves or a bystander. Gann additionally states being able to train regardless of the weather, or adversely impact anybody's job while training, as reasons the simulators are a valuable component.

Students can use the simulators in both the classroom and/or the mobile training lab. Gann says they built the mobile simulator lab as a dual purpose facility. When students move to the outdoor training lab for hands-on machine training, they can rotate between the simulators and actual machines. The mobile unit is also used for marketing purposes to demonstrate the simulator portion of the training program and to promote the heavy equipment program to industry professionals thinking about training their employees.

The last piece of the puzzle is how to gather and analyze all of the metrics from the simulators. Stanly Community College's lead instructor, Josh Aldridge, uses SimU Campus™ records management software to manage student performance records. Expectations are set high for students. For example, in the Controls Familiarization module of the Hydraulic Excavator simulator, students must go through 100 instruction points and must get them 100% correct. Gann paints a vivid picture when he relates, "We feel this way: If you are the excavator operator and have two men in the trench, it only takes one error to crush a guy against the side of the trench box."

SimU Campus allows the instructor and administrators to track the students' progress and see how they improve over time. It gives the instructor and the student immediate feedback. The instructor can identify where students make mistakes and then work with them to correct the errors. Instructors can show students "outside-the-machine" views on the simulator as well as from inside the cab to show and explain how to properly complete tasks."By this time students are beginning to see that this is way more than a video game," muses Gann.

Final Destination

A final differentiator for the program is field trips—that is visits to working job sites such as mines and construction sites. These visits give students the opportunity to get exposure to machines at work and see real-world operator skills in action. Students can also begin to see where they might find future employment and how they could fit into the employers' operations. The college is regularly contacted by prospective employers who need qualified employees. They have even added a new position in the jobs placement office to help students find employment after graduation.

Local partnerships have helped shape the program. From working with the advisory committee for feedback and curriculum development, to getting the Caterpillar dealership and the Air National Guard involved, Stanly Community College is truly serving its own community by training many of tomorrow's heavy equipment operators.