

How Alaska Department of Corrections used Simlog's Personal Simulators to Create an Affordable and Secure NCCER Heavy Equipment Simulator Program

Alaska Department of Corrections' (ADOC) Goose Creek Correctional Center (GCCC) opened in July 2012 and houses over 1,500 inmates. It is a minimum and medium custody facility for men. With over thirty established vocational programs, GCCC's mission emphasizes rehabilitation and re-entry into society.

GCCC's vocational programs are operating at full speed, including the "Heavy Equipment Simulator Level 1 - 3" that uses National Center for Construction Education Research (NCCER) curriculum guidelines for Heavy Equipment Operations (HEO), and Simlog's Personal Simulators for practical skills training.

The Need for Simulation

Simlog's Personal Simulators were first identified by one of ADOC's vocational coordinators at a workshop session during Anchorage School District's annual Summer Camp professional development conference in 2013. The workshop showcased the Alaska Construction Education Foundation's newly acquired portable HEO simulator lab with eight stations of Simlog's Hydraulic Excavator, Bulldozer, Wheel Loader and Forklift Personal Simulators.

News of the simulators was brought to the attention of Gary Olsen, ADOC's Criminal Justice Planner of Education. A six-week pilot program was set up shortly after the Summer Camp at ADOC's Spring Creek Correctional Center, using the portable HEO simulator lab on loan from the Alaska Construction Education Foundation.

"The pilot program received a very positive response from the inmates and they showed that they could take care of themselves and the simulators," explains Gary Olsen. "My vocational team and I then identified the NCCER courses for introductory HEO and thought that the simulators aligned perfectly with security concerns."

Simlog's Personal Simulators satisfied several important criteria for use at GCCC's new facility, and enabled Gary Olsen to obtain the funds to implement a Simlog simulator lab of his own:

- Internet connection absolutely not required.
- Securely containable within a vocational area.
- Instant performance data on trainees' sessions.
- Fit with NCCER as a recognized standard.

"The simulators also align perfectly with Department of Labor priorities on shortages of skilled workers," continues Olsen. "The construction industry has proven to be the least discriminatory when it comes to hiring returning citizens, and high-paying HEO jobs are no exception."

A Cost-Effective Simulator Lab

ADOC purchased Simlog's Personal Simulators in 2014, and the new HEO program was launched in January 2015. The simulator lab consists of four networked simulator stations, with Simlog's Simulation Manager that automatically tracks trainees' simulation results.

Tabletop-mounted Replica Control Joysticks are used to operate the Hydraulic Excavator, Bulldozer and Wheel Loader simulators. Replica Control Ball-Tip Levers, also tabletop-mounted, are used to operate the lab's Forklift simulator. Each station is also equipped with the required steering wheel, gear



Goose Creek Correctional Center (GCCC) opened in July 2012 in Wasilla Alaska

shifter and/or foot pedals that best reproduce the functionality of the real heavy equipment.

Two simulator stations are "Multi-Purpose", for the Hydraulic Excavator, Bulldozer and Wheel Loader simulators by taking advantage of the simulator controls that are common to these three simulation software programs. Multi-purposing the simulator stations was a significant factor in making the simulator lab affordable for the institution.

"Cost-effectiveness of the simulators served as a significant motivator for creating the HEO program," comments Olsen. "Cost per trainee is very economical with safety for the inmates and convenience for the instructors also playing important roles."

Simulators at the Core of the Program

Inmates are allowed to participate in GCCC's "Heavy Equipment Simulator" course if they meet the following criteria:

1. Completion of the NCCER Vocational Math course.
2. Completion of the NCCER Core Curriculum.
3. No disciplinary infractions in the last 6 months.
4. Have ample time to serve, so enough time to complete the course (all 3 levels).

All "Heavy Equipment Simulator" classes are taught by NCCER certified instructors in a controlled learning environment.

A key enabler to achieving real outcomes from the program is the combination of simulator-based training and course curriculum from NCCER. Inmates are



The Simlog Simulator Lab at the
Goose Creek Correctional Center

able to securely practice on the simulators and develop their proficiency in alignment with actual NCCER Performance Profiles (practical exam) and become skills-ready to earn nationally recognized NCCER Heavy Equipment Operator credentials.

Being in a highly secure facility, inmates are not permitted outside the fence, nor are they permitted to operate real heavy equipment for training. The instructor's role during simulator time is primarily as mentor. The trainees are doubled-up on the simulators, allowing them to observe and learn from each other.

"GCCC had been using NCCER text books for a couple of years but I used Simlog as an argument that we need NCCER certified vocational instructors to teach the courses," says Olsen. "With the simulators fulfilling the practical role for an introductory NCCER HEO course, we're lowering the barriers for a felon when he gets out."

The trainees' time on the simulators follows the NCCER curriculum for Introduction to HEO levels 1 to 3. As they progress through the Simulation Modules, practical exams are given on the simulators to prove that the skills presented in the NCCER text book can be accomplished on the simulator.

Each chapter in the NCCER curriculum requires a written exam with a minimum score of 70%. GCCC has established a practical exam for the simulator-based course work with a pass or fail grade determined by the instructor. Benchmarks are set for the simulators' Simulation Results so that each trainee knows how proficient he needs to be to pass.

The objective of the pass or fail is to determine if the trainees have acquired sufficient muscle-memory and proficiency for operating heavy equipment. Their level of control and operation can be tested and proven from the simulators' measurement and the record-keeping of dozens of operations performed using the controls.

Success to Date

GCCC began its first "Heavy Equipment Simulator" course with six trainees in January 2015. After four months, the first group of trainees took the final exam in May 2015. All six trainees completed the program and achieved a passing grade.

"We see the proof that an inmate's experience and muscle memory from the simulators will decrease the learning curve when completing his training on real equipment on the outside," says Olsen. "In other

words, there is less time to gainful employment and less chance of recidivism after they are released."

By the end of the first course in May 2015, GCCC already had a waiting list of inmates wanting to participate in the program so class size increased to fifteen trainees after that, starting in July 2015.

As of this writing (2020), GCCC now has five completed years of experience with their Simlog Personal Simulators. Practically, with 4 inmates at the 4 simulator stations 5 hours per day, 5 days per week, 52 weeks per year, those 5 years of experience represent a total of 26,000 hours of simulator-based training.

Approximately 60 inmates have completed the full program, to become graduates of GCCC's "Heavy Equipment Simulator, Level 1 - 3". Over 1,200 inmates have completed the practical skills training in the simulator lab, working towards achieving the simulator-based benchmarks established by the instructor (but not yet the other parts of the full program).

"Cost per inmate trained is now down to approximately \$60 based on the fact that our original simulator investment has been running steadily the past 5 years," concludes Olsen. "I'd like to thank Christopher Woods, our vocational instructor who helped create GCCC's Heavy Equipment Simulator program, which now serves as a model for other ADOC facilities to follow."

About Simlog

Simlog's Personal Simulators have been delivering cost-effective heavy equipment operator training to education and industry since 1999. Our products set the standard for career exploration, skills learning, and workforce development, placing hundreds of thousands of students around the world on a pathway to becoming superior operators. Simlog's customers include over 350 career and technical education programs across North America. Among them are prisons, adult and youth rehabilitation and reentry programs, and correctional high schools.

Each of Simlog's 16 Personal Simulators was designed in collaboration with leading heavy equipment manufacturers (OEMs) and vocational training professionals to meet nationally recognized standards within construction trades, logistics, material handling, mining and forestry programs. State of the art realism engages students in safe step-by-step skills development for a broad range of heavy equip-

ment that includes Forklift, Hydraulic Excavator, Bulldozer, Wheel Loader and Mobile Crane; offered in the most economical setup options for any class size.

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Corrections**
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Simlog's Personal Simulators used in the Goose Creek Correctional Center HEO Program

- ▶ Forklift Personal Simulator
- ▶ Wheel Loader Personal Simulator
- ▶ Hydraulic Excavator Personal Simulator
- ▶ Bulldozer Personal Simulator



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