

# SIMLOG

The Standard in Cost-Effective Simulation  
for Training Heavy Equipment Operators

## Florida DOC Program Experience: Simulator Labs for Heavy Equipment Operations

CEA International Conference and Training Event  
August 29, 2022

## Speakers

Paul Freedman  
President  
Simlog

Adam Ryalls  
CTE Programs Coordinator - Region III  
Florida DOC

## Overview

- ▶ job prospects for operating heavy equipment in construction and logistics
- ▶ vocational training and corrections
- ▶ Simlog's "Personal Simulators"
- ▶ alignment with industry curriculum & credentials
- ▶ FL DOC Breaks Ground

## The General Jobs Outlook

The economy is charging into the post-pandemic world with significant momentum.

At the heart of America's economic momentum is rapid workforce growth, with more people re-entering the workforce to take advantage of higher wages and to better contend with rapidly rising prices.

## Job Prospects in Construction

- all jobs “lost” to COVID-19 now “recovered”
- 3 out of 4 firms are trying to hire
- hourly pay rising quickly → industry *average* now \$32!

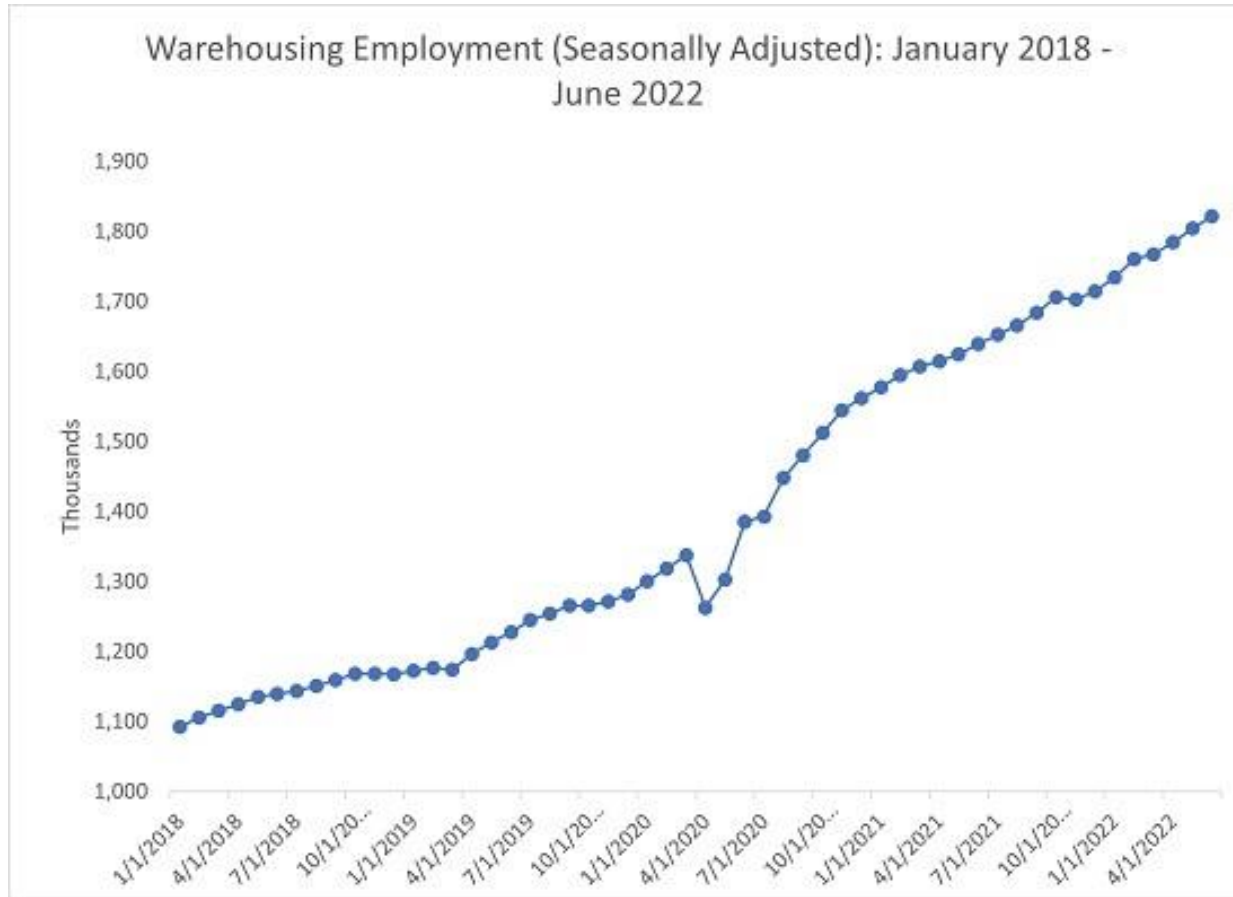
Association of General Contractors (2022)

## On the Horizon

The construction industry will need to hire *hundreds of thousands* of additional workers in each of the next several years to complete projects that will be funded by the recently enacted *\$400 billion dollar* “Bipartisan Infrastructure” law, as well as to satisfy the continuing demand for homebuilding and private nonresidential structures.

Association of General Contractors (2022)

# About Job Growth in Logistics



“Warehouses are *still* full of goods, and firms are *still* shipping inventory all over the world at a heightened rate.”  
Supply Chain Management Review (2022)

## Companies are Struggling (1)

- leading firms can't hire enough people
- wages still rising for hourly employees, including lift truck operators
- “staffing” agencies are now just *recruiting*, i.e. working full time to “find” people (instead of “supplying” qualified lift truck operators where needed)



## Companies are Struggling (2)

Over the past two years, Amazon has

- doubled its “operational capacity”
- increased the number of “Fulfillment Centers” by 30%

Other major players (Home Depot, Target, Walmart, etc.) are also “scaling up” to address e-commerce growth:

→ forecasting 330 million sq. ft. of new space!

### Supply Chain Drive (2022)

## Help from Corrections

Employers in both construction and logistics

- are looking to “non traditional” populations
  - are more “accepting”, and so ready to hire, “qualified” inmates after their release
- “qualified” → ready to work → have received training

## Testimonials (1)

“I’ve seen students [inmates] released and then cycle right back into the system within months, weeks or even days. But *learning a skill* positions more students to avoid another run-in with the law.”

*Earl Gayle, Instructor*

*New Jersey Juvenile Justice System*

*(Simlog Customer)*

## Testimonials (2)

“I have been in this industry for decades and have taught people to operate Heavy Equipment in the field many times, and these simulators will have a very positive impact on that process. Congratulations [to Simlog] for inventing a very useful and realistic product.”

Jarrold Mesloh, CTE Heavy Equipment/CDL Instructor, Marion CI, FL DOC

## Introducing Simlog (1999)

- ▶ offices in Montreal (Canada)
- ▶ over 25 reselling partners, including *Technical Training Aids* (TTA) in the State of California
- ▶ four industry sectors: forestry, mining, material handling, construction
- ▶ “Personal Simulators” for training people to operate 16 different kinds of heavy equipment

## Products at FL DOC for Heavy Construction & Logistics Equipment



Forklift



Reach Lift Truck



Skid Steer Loader



Backhoe Loader



Hydraulic Excavator



Bulldozer



Wheel Loader

## Personal Simulator Software

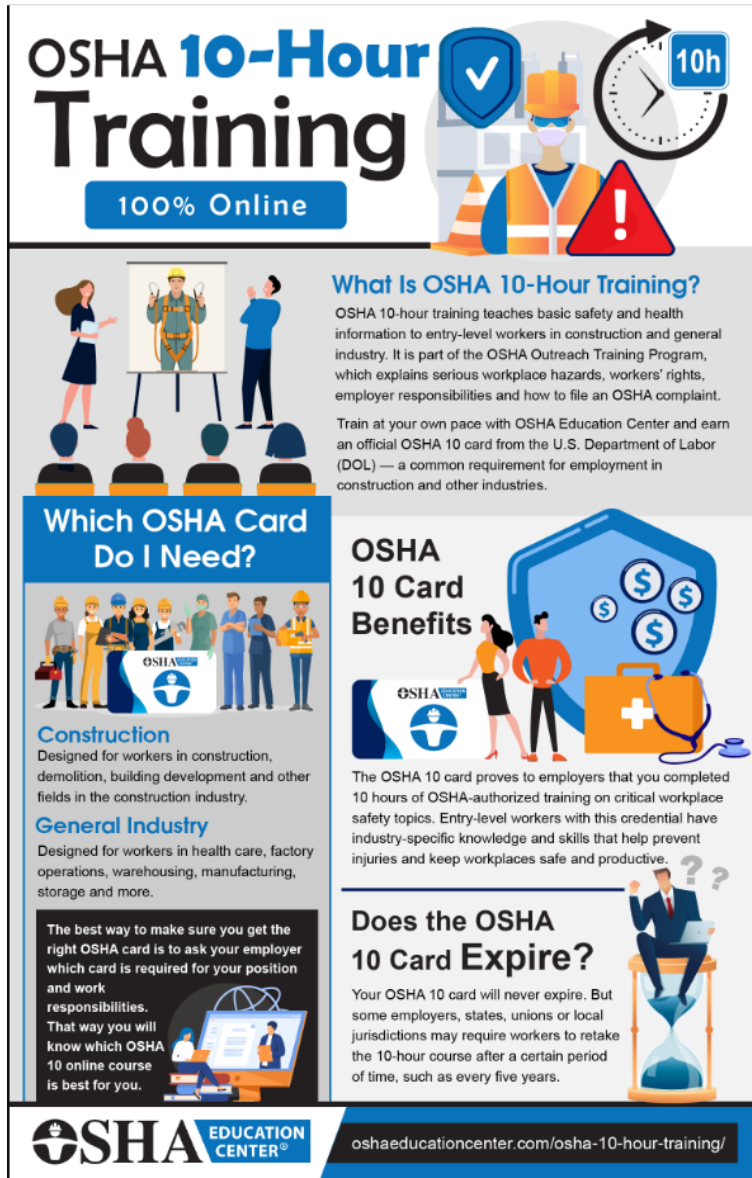
- ▶ 3D modelling is “generic”
- ▶ designed for *off-the-shelf* (Windows) computers, displays, speakers, etc.
- ▶ focus on developing “core skills”
- ▶ wide variety of operational scenarios
- ▶ no Internet access required

## Alignment with Industry Standards

Our *Instructional Designs* are developed to “align” with standardized training curricula.

- *know* enough: Knowledge Exam (theory)
- *do* enough: Practical Exam (demonstrating skills)





**OSHA 10-Hour Training**  
100% Online

**What Is OSHA 10-Hour Training?**  
OSHA 10-hour training teaches basic safety and health information to entry-level workers in construction and general industry. It is part of the OSHA Outreach Training Program, which explains serious workplace hazards, workers' rights, employer responsibilities and how to file an OSHA complaint.  
Train at your own pace with OSHA Education Center and earn an official OSHA 10 card from the U.S. Department of Labor (DOL) — a common requirement for employment in construction and other industries.

**Which OSHA Card Do I Need?**

**Construction**  
Designed for workers in construction, demolition, building development and other fields in the construction industry.

**General Industry**  
Designed for workers in health care, factory operations, warehousing, manufacturing, storage and more.

The best way to make sure you get the right OSHA card is to ask your employer which card is required for your position and work responsibilities. That way you will know which OSHA 10 online course is best for you.

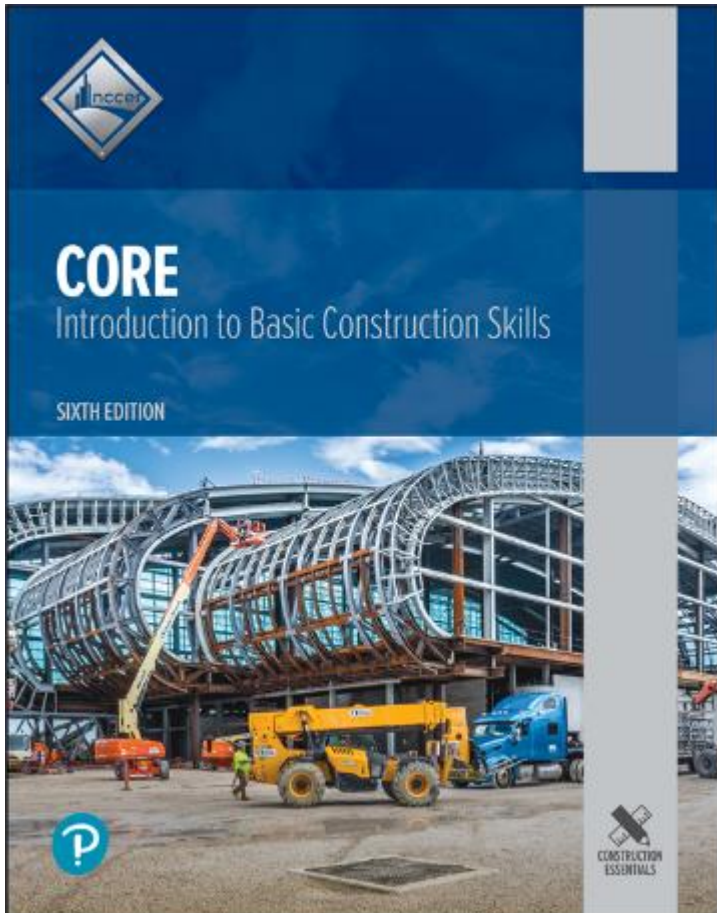
**OSHA 10 Card Benefits**  
The OSHA 10 card proves to employers that you completed 10 hours of OSHA-authorized training on critical workplace safety topics. Entry-level workers with this credential have industry-specific knowledge and skills that help prevent injuries and keep workplaces safe and productive.

**Does the OSHA 10 Card Expire?**  
Your OSHA 10 card will never expire. But some employers, states, unions or local jurisdictions may require workers to retake the 10-hour course after a certain period of time, such as every five years.

**OSHA EDUCATION CENTER**  
[oshaeducationcenter.com/osha-10-hour-training/](https://oshaeducationcenter.com/osha-10-hour-training/)

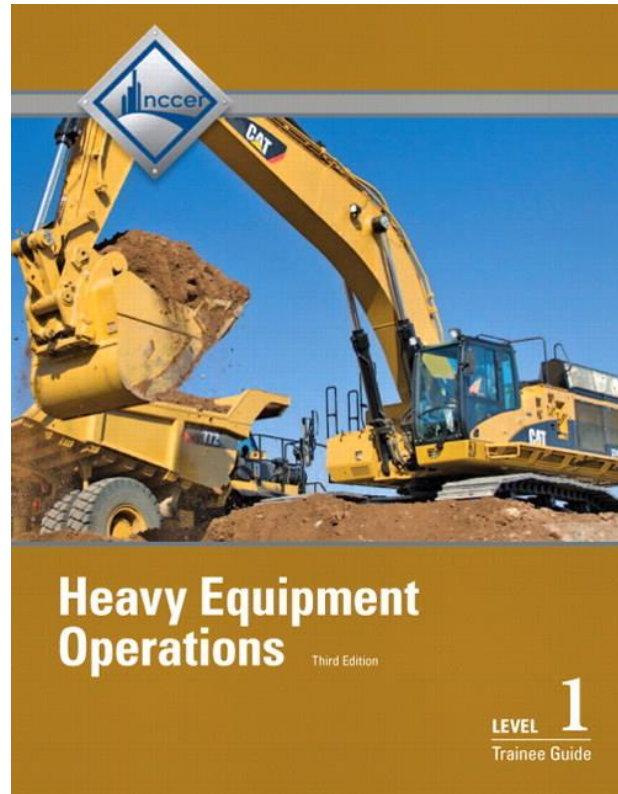
- target audience: entry-level workers
- focus on *safety*
- nominal 10 hour duration
- two versions
  - general industry (manufacturing, factory operations, warehousing, etc.)
  - construction industry

## NCCER Core Curriculum



- ▶ **Basic Safety (Construction Site Safety Orientation)**
- ▶ **Introduction to Construction Math**
- ▶ **Introduction to Hand tools**
- ▶ **Introduction to Power Tools**
- ▶ **Introduction to Construction Drawings**
- ▶ **Introduction to Basic Rigging**
- ▶ **Basic Communication Skills**
- ▶ **Basic Employability Skills**
- ▶ **Introduction to Materials Handling**

## NCCER's HEO Curriculum



### Trainee Guides:

- Level 1
- Level 2
- Level 3

[www.nccer.org/workforce-development-programs/disciplines/craft-details/heavy-equipment-operators](http://www.nccer.org/workforce-development-programs/disciplines/craft-details/heavy-equipment-operators)

## Sample “Crosswalk” for Backhoe Loader Operations



NCCER Practical Exam Task	Simlog Simulation Module
Basic Maneuvering	Bucket Positioning
Create a Trench	Trenching
Load a Truck with the Loader Bucket.	Truck Loading - Loader Truck Loading – Backhoe (extra!)
Backfill the Excavation from a Stockpile	Stockpiling

## Performance Indicators

- For each Simulation Module, comprehensive *Performance Indicators* measure how *quickly* and how *carefully* trainees are working.
- The simulation software automatically tracks the values of these Performance Indicators, to create simulation results.
- Students advance in a “self-managed” way by comparing their results to *target values*.

## About Benchmarks

Simlog can provide a “starting point”

- ▶ target values developed by other customers that we can share (with their permission)

Your “starting point”

- ▶ simulation results generated by your partner’s (experienced) operators

## Simlog: the CTE Market Leader

- ▶ 7 innovation awards
- ▶ 500 career and technical education programs world-wide
- ▶ 300 vocational programs in North America

## Corrections Customers from Coast to Coast

- ▶ Alabama (2 sites), Alaska (2 sites)
- ▶ California, Connecticut, D.C.
- ▶ Hawaii (4 sites)
- ▶ Minnesota, Nebraska
- ▶ New Jersey, Ohio (2 sites)
- ▶ Texas, Virginia
- ▶ Washington, Wyoming
- ... and Florida DOC (8 Sites)!





## *Florida DOC Breaks Ground ...*

## FDOC + CareerSource = Florida HIREs

“CareerSource Florida is grateful to be partnering with the Florida Department of Corrections on the Florida HIREs program to help returning citizens secure and maintain good jobs. In helping returning citizens make a fresh start with a rewarding job, we are helping end the cycle of recidivism, saving tax dollars and uplifting our communities.”



**Michelle Dennard**, CareerSource Florida President and CEO

## HIRES: Helping Inmates Realize Employment Success

“The Florida HIRES program is an excellent example of how we can work together to help incarcerated individuals begin working on in-demand job skills well before leaving the correctional system. Providing evidence-based training and employment assistance reduces recidivism and makes Florida a safer place to live.”

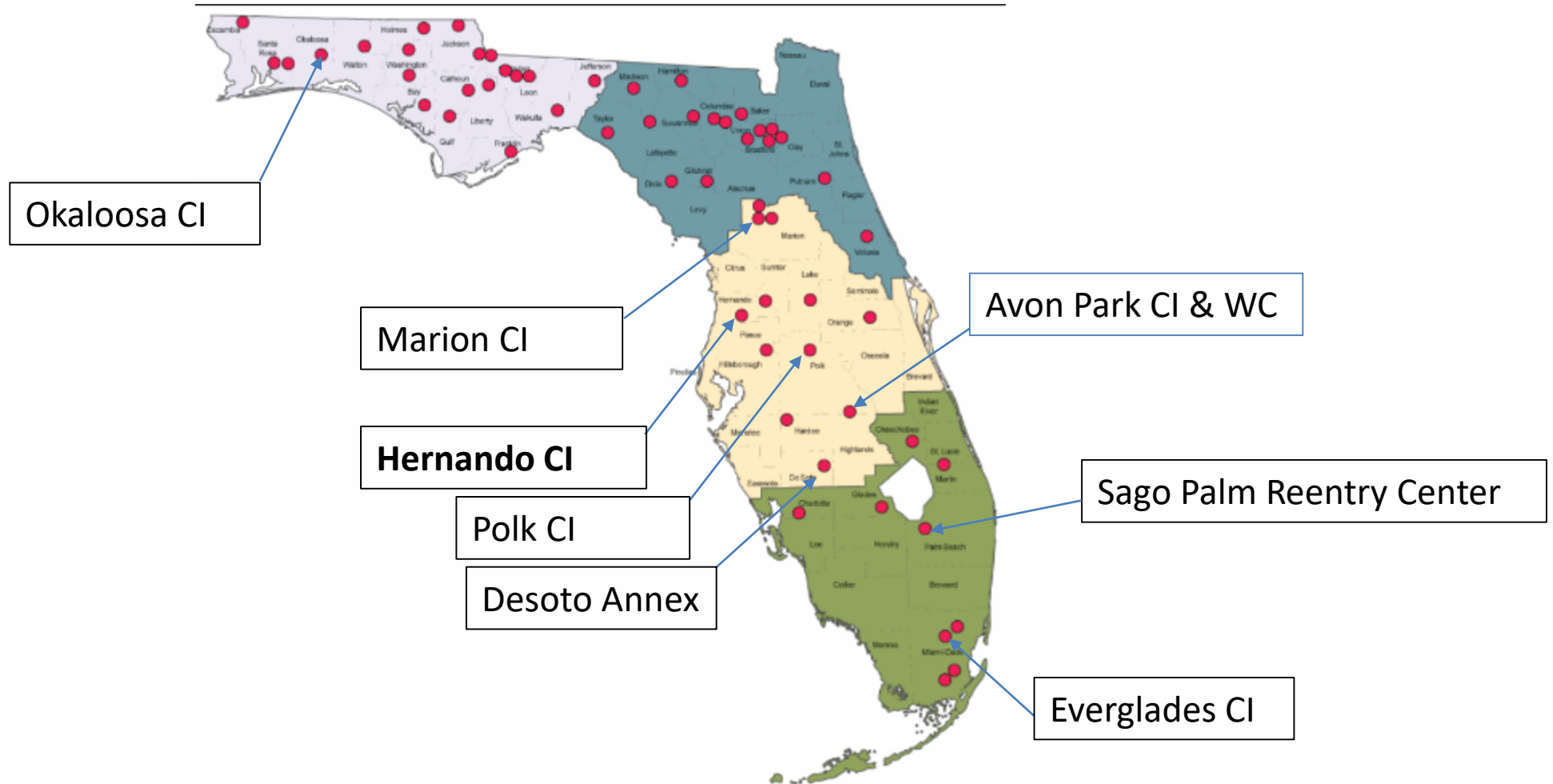


**Mark Inch**, Secretary of the Florida Department of Corrections

## Two Operator Training Programs

- ▶ Logistics (supply chain), at 3 Correctional Institutions
  - Avon Park, De Soto, Everglades
  
- ▶ Heavy Equipment Operations (HEO), at 5 Correctional Institutions
  - Hernando, Polk, Marion, Okaloosa, Sago Palm

## HEO/Forklift Operator Training at 8 Locations



## Logistics Curriculum Details

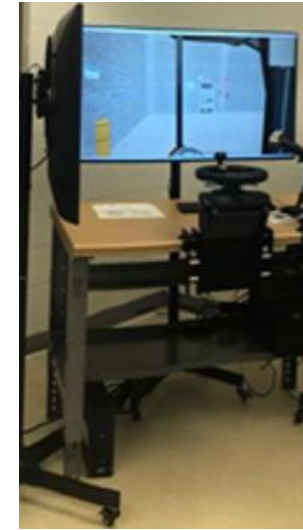
- ▶ OSHA 10 (for “General Industry”)
- ▶ NCCER Core curriculum
- ▶ FL DOE framework, T300100 (Global Logistics & Supply Chain Technologies)
- ▶ Simlog Personal Simulators: (sit-down) Forklift, (stand-up) Reach Lift Truck

## Logistics Program at Avon Park CI (1)



(Sit-down)

Forklift Personal Simulator  
with Operator Chair



(Stand-up)

Reach Lift Truck Personal Simulator  
with Tabletop Replica Controls

## Logistics Program at Avon Park CI (2)



Simulator Lab with 8 Stations  
(Tabletop Replica Controls, Operator Chairs)



## Logistics Program at DeSoto CI



(Sit-down)

Forklift Personal Simulator  
with Tabletop Replica Controls

Forklift operator training is now part of the *Masonry* program, to address the needs of related material handling on the jobsite, in a warehouse, or a yard.

## HEO Curriculum Details

- ▶ OSHA 10 (for “Construction”)
- ▶ NCCER
  - Core curriculum
  - HEO Level 1
- ▶ FL DOE framework, T440200 (Heavy Equipment Operations Technician)
- ▶ Simlog Personal Simulators: Backhoe Loader, Bulldozer, Hydraulic Excavator, Wheel Loader, Skid Steer Loader

## HEO Program at Polk CI



Polk CI is a men's prison in west central FL.

Shown here is a (real) backhoe loader used to provide "hands-on" experience *after* the simulator-based preparation.

## About Hernando CI (1)



Hernando CI was a women's prison, now for men, in west central FL.

Inmates utilize NCCER curriculum and simulators to learn essential safety & craft skills as a Heavy Equipment Operator.



## About Hernando CI (2)

- ▶ 450 inmates
- ▶ became a facility for men in 2022
- ▶ focus on “re-entry”
- ▶ graduates to connect with possible employers, prior to release

## Setups with Tabletop Replica Controls (1)



Bulldozer  
Personal Simulator

Wheel Loader  
Personal Simulator

## Setups with Tabletop Replica Controls (2)



Skid Steer Loader  
Personal Simulator

Hydraulic Excavator  
Personal Simulator

## Setups with Operator Chairs



Backhoe Loader  
Personal Simulator



Bulldozer  
Personal Simulator



## HEO Program Details at Hernando CI (1)

- ▶ 1<sup>st</sup> class: 15 people (women)
  - May 2021 – May 2022 (one calendar year)
  - age range: 30's, 40's, 50's
  - no previous “trades” (equipment operating) experience
- ▶ how chosen
  - 2 years or less to complete sentencing
  - best grades for G.E.D. and T.A.B.E.

## HEO Program Details at Hernando CI (2)

- ▶ 2 x 3 hour “blocks” of training per day, 5 days per week
  - half the class learning “theory”
  - half the class learning “skills” at the 8 simulator stations  
(no real heavy equipment)
- ▶ total of 1,200 hours *per person*

## HEO Program Details at Hernando CI (3)

- ▶ 100% certificate success!
  - OSHA-10
  - NCCER Core
  - NCCER Level 1
  - Training Benchmarks for all Simulation Modules
- women all “work ready”, and all now released (as of August 2022)

## HEO Program Details at Hernando CI (4)

- ▶ 2<sup>nd</sup> class: 15 people (men)
  - July 2022 – July 2023 (one calendar year)
  - age range: 20's, 30's, 40's
  - some have previous “trades” experience e.g. operating equipment
- ▶ chosen as per the 1<sup>st</sup> class
- ▶ same training program as per the 1<sup>st</sup> class

## End of Presentation