

# Alternative Load Handling Equipment Engineering & Applications

## Course #804 Alternative Load Handling Equipment Engineering & Applications

This course introduces participants to commonly used alternatives for heavy load handling. Participants will learn about engineering considerations and optimal applications for vertical and horizontal load handling systems including strand jacks, telescopic gantry systems, lift towers, and skidding systems. Course includes lectures, reading assignments, exercises and exams. This course is accredited by LEEA and approved by ASME for Continuing Education Units (CEUs) in compliance with the IACET Standard.

### Lesson 1: Hydraulic & Strand Jacks

#### Topics

Major Considerations; Strand Jacks; Compatible Mast Systems; Jack and Pack Systems; Heavy Duty Proprietary Systems; Elephant Foot Jacks; Gripper-Type Climbing Jacks; Push-Up Mast Systems; Cranes with Strand Jacks

#### Objectives

- Analyze the engineering considerations of various types of hydraulic and strand jacks including their common applications.
- Evaluate compatible mast structure construction, features, and common applications.
- Evaluate push-up mast system construction, features, and common applications.

### Lesson 2: Telescopic Hydraulic Gantries

#### Topics

Major Considerations; Application & Engineering; Lift Planning; Operations; Stand Jacks on THGS

#### Objectives

- Evaluate gantry system components, features, and common applications.
- Interpret a gantry's hydraulic system including load capacities and limitations, and load combinations.
- Develop and evaluate a stable gantry system design.
- Develop engineering methods and lift plans utilizing gantry systems.

### Lesson 3: Modular Lift Towers & Various Systems

#### Topics

Engineering Considerations; Alternative Lift Methods; Layout & Construction Guidelines; Operations

#### Objectives

- Determine and develop a rationale for projects that use modular lift towers.
- Evaluate modular lift towers components, features, and common applications.
- Evaluate the major engineering considerations for designing, planning and executing load handling projects with modular lift towers.

### Lesson 4: Horizontal Load Handling Systems

#### Topics

Major Considerations; Skidding Systems; Rolling Systems; Alternative Horizontal Rigging Systems

#### Objectives

- Determine and develop a rationale for projects that use horizontal load handling systems.
- Apply engineering principles to horizontal systems such as coefficient of friction, center of gravity, and force.
- Evaluate the major engineering considerations for planning and executing load handling projects with horizontal systems.
- Design a plan for utilizing a rolling system including layout and assembly, and operational execution.

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