

Site Evaluation & Crane Setup

- Roles and responsibilities of all persons involved with the lift
- Factors that impact the lift such as tail swing, load path and clearances
- Impact of various weather conditions
- How to deal with unstable ground and setup on soft surfaces
- Hazards such as overhead obstructions, power lines and underground hazards
- Standards and guidelines regarding various risks and hazards
- ASME standards and OSHA regulations
- Requirements of crane setup such as radii, clearances, crane dimensions and load dimensions
- Crane setup procedures such as use of outriggers, lifting on rubber and leveling the crane
- Site requirements for blocking

Pre-Operational Crane Inspection

- Crane inspection procedures
- Crane components including the following:
 - Engine, air, electrical & hydraulic systems
 - Chassis & running gear components
 - Outriggers and counterweights
 - Boom components
- Operating controls
- Safety Devices
- Operational aids
- Basic load rigging procedures
- Knowledge of sling and hardware capacity
- Impact of deformities in slings and hardware

Load Charts

- Using/Interpreting capacity charts
- Arithmetic skills without the use of calculators
- Determining lifting capacity, including:
 - Configuration of crane mounting
 - Areas of operation for different types of mobile cranes
 - Boom length and boom angle
 - Load radius
 - Gross capacity and net capacity
 - Capacity deductions
 - Parts of line
- Conditions that reduce capacities, including:
 - Crane not to specification
 - Crane condition
 - Crane level
 - Wind
 - Side loading
 - Increase in load radius
 - Dynamic loading
 - Shock loading
 - Eccentric reeving
 - Duty cycle operations

Crane Operation

- How to enter and exit the cab of the crane in a safe manner
- Procedures for setup and usage of operational aids
- Hand signals or voice signals used to direct crane operator
- Handling loads out of operator's sight (operating in the blind)
- How to handle loads submerged in water
- How to move loads from an elevated position
- Duty cycle considerations (i.e., steel erection, concrete bucket operations)
- Traveling the crane
- Heavy lift operations, procedures and types of heavy lift attachments
- Attachments for luffing jibs
- Hoisting procedures and personnel hoisting equipment
- Procedures for securing the crane under standard and emergency conditions