



Mobile Crane Operator “3 WEEK” Certification Program

Course Overview

Program: The Mobile Crane Operator 3-Week training program provides the appropriate training for new and existing crane operators who are working toward becoming a professional mobile crane operator and to obtain the NCCCO operator certification. This program requires 3 weeks according to the following schedule:

Week 1 – Classroom and hands-on instruction

Week 2 – Hands-on instruction with some classroom instruction

Week 3 – Hands-on instruction, NCCCO written exams and NCCCO practical exams

Unlike most crane operator schools this program includes the following as part of the hands-on instruction:

- Pre-use inspection
- Setting up the crane for work (every day)
- Packing up the crane ready for travel (every day)
- Driving the crane (every day)
- Operating the crane
- Changing parts of line from single part to a 4-part reeving and then operating the crane
- Erecting the lattice extension and jib and then operating the crane
- Up-ending a pole from a horizontal position and then laying it back down

Objectives: Personnel attending this program will:

- Understand and demonstrate mobile crane pre-use inspections including record keeping requirements;
- Understand and demonstrate mobile crane set-up including all function checks;
- Understand and demonstrate mobile crane operations including all boom functions and travel;
- Know and demonstrate the standard hand signals;
- Understand mobile crane terminology and components;
- Understand and demonstrate load capacity chart usage;
- Recognize associated hazards and how to avoid them, including electrical power lines;
- Know and react to the stop and emergency stop signals;
- Understand basic rigging concepts;
- Understand and demonstrate mobile crane preparation for travel;
- Successfully receive the NCCCO TSS and TLL mobile crane operator certifications.

Course Topics:

Site

- Elements that affect ground stability
- Supporting materials (mats, blocking/cribbing)
- Electric power line hazards
- Crane travel without load
- Identify and evaluate hazards concerning:
 - Access to job site
 - In-transit clearances
 - Pinch/crush points
 - Personnel

- Controlling entity responsibilities concerning site conditions
- Review lift requirements

Inspections & Set-Up

- Inspect crane for unsafe conditions
- Personnel safety requirements during inspections
- Inspection intervals
- Leveling the crane
- Verify the radius and load weight

Technical Knowledge

- Federal regulations and industry standards (ASME B30.5, B30.10, OSHA 1910.180, 1926 Subpart CC)
- Crane terminology and definitions
- Functions and limitations of cranes/attachments
- Basic rigging procedures
- Hook blocks and overhaul balls.
- Wire rope:
 - Types and designations and their application
 - Termination
 - Replacement criteria and inspection procedures
 - Maintenance and lubrication
- Line pull and reeving
- Protective measures against electrical hazards
- Instruments and gauge readings
- Fall protection requirements
- Access and egress of the crane

Operations

- Wire rope: reeving and parts of line
- Block and line twisting
- Signal communications:
 - Hand signals, voice/radio signals
- Know the requirements for:
 - Multi-crane lifts
 - Suspended personnel platforms
 - Duty cycle operations
 - Barge operations
 - Multi-drum operations
- Lifting loads from water.
- Procedures when load is not in operator's view.
- Tag lines.
- Personnel in fall zone
- Load moment/capacity indicator

- Rated capacity limiter/indicator
- Anti-two block devices
- Level indicator
- Boom angle indicator
- Wind indicator
- Drum rotation indicators
- Radius indicators
- Alternative operating procedures when operator aids malfunction.
- Emergency procedures for
 - Electric power line contact
 - Loss of stability
 - Control malfunction
 - Carrier or travel malfunction
 - Two-blocking
 - Overloading
 - Fires
- Effects of dynamic loading
- Effects of side loading
- Weather conditions (wind, lightning)
- Backward stability
- Manufacturer-approved attachments
- Operator's authority to stop operations
- Shut down and secure when left unattended

Load Charts

- Terminology necessary to use load charts
- How to use load charts, including:
 - Stability versus structural (or hydraulics)
 - Range diagram
 - Work area chart
 - Parts-of-line information
- Calculating net capacity

Examinations: There are various preliminary written exams and workshops that are used as a benchmark for the NCCCO written exams. There are three NCCCO written exams (CORE, TSS & TLL) and two NCCCO practical exams (TSS & TLL) that are administered in accordance with the NCCCO policies and procedures. All exams are administered at The Crane School during this 3 week program.

TSS – telescopic boom fixed cab cranes
TLL – telescopic boom swing cab cranes

Sample NCCCO Certification Card

