



## **M&A Safety Services**

512 Viaulet Road  
Youngsville, Louisiana 70592  
Main: 337-451-4685  
Fax: 337-451-5847  
[www.masafetyservices.com](http://www.masafetyservices.com)

### **Mobile Crane Operator Safety** Course Outline

**Prerequisites:** This course shall have no formal pre-requisite. The individual should have no history of a disabling medical condition, which may be sufficient reason for disqualification.

**Course Length:** 3-4 hours – Course length shall vary depending on the number of delegates. Total course time includes breaks.

**Class Size:** The maximum number of delegates that may be trained and tested per instructor shall be thirty-five (35) in the classroom session and twenty (20) in the practical session. A second instructor shall be added for the practical session once the participation exceeds twenty (20) and exercises will be divided into groups.

#### **Course Objective**

- ) Provide delegates assigned to mobile crane duties the necessary skills to safely perform their jobs.
- ) Provide delegates with recommended practices and guidelines to perform safely while working with mobile cranes.
- ) Delegates should be able to demonstrate the necessary skills during practical examination and demonstrate knowledge during written examination.

#### **Course Design**

- ) Power Point© / Lecture / Audio Video / Visual Aids
- ) Demonstrations
- ) Practical Exercises

#### **Successful Course Completion**

- ) Requires a minimum score of 75% or better.
- ) Grades shall be calculated by dividing the number of questions answered correctly by the total number of exam questions.
- ) Delegates will have no more than thirty (30) minutes to complete the exam.
- ) Successful completion of practical session is mandatory.

#### **Course Content Summary**

- ) Classroom
- ) Practicals

**Breaks:** 10 minutes (approximately every hour)



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**Lunch:** 1 Hour (if applicable)

### Course Outline

#### Crane Requirements

- ) Definitions
  - Qualified Rigger
  - Qualified Crane Operator
  - Qualified Crane Inspector

#### Crane Components

- ) Mobile Crane Common Components
- ) Boom Components
  - Boom/Jib
  - Head Sheave Assembly
  - Structural Integrity
    - Boom Bolts
    - Pin Connectors
  - Boom Stops
  - Limit Devices
    - Boom-hoist limit
    - Load hoist limits
    - Boom stops
    - All locking devices
    - Anti-two block devices
  - Hoist Equipment
    - Main/Auxiliary Hoist
    - Blocks/Hooks
    - Wedge sockets

#### Crane Inspection

- ) Inspection Categories
  - Frequent
  - Periodic
- ) Inspection categories
  - Pre-Use
  - Monthly
  - Quarterly
  - Annual
  - Recordkeeping

#### Crane Maintenance

- ) Maintenance Procedures



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- ) Wire Rope Construction/Handling
- ) Loading Wire Rope on Crane Drum
- ) Wire Rope Inspection/Replacement Guidelines
- ) Sheave Inspection

### **Crane Operations**

- ) Lift Capacity
- ) Boom Angles
- ) Load Radius
- ) Load Charts
- ) Load Limiting Factors
- ) Electrical Hazards
- ) Operator Responsibilities
- ) Before Starting the Lift
- ) Before Leaving Controls
- ) Crane Accidents Contributing Factors

### **Crane Accident Review**

- ) Big Blue
- ) Contact with Power Lines

### **Crane Safety**

- ) Crane/Rigging Lift Plan
- ) Personal Protective Equipment
- ) Hand Signals/Communication

### **Practical Session**

Practical training shall utilize a mobile crane, various slings, loads & rigging techniques.

Practical shall verify the following:

- ) Conducts proper pre-use inspection of crane and rigging gear
- ) Selects the appropriate hardware/rigging gear to complete required lifts
- ) Effectively controls the crane operations and uses operating indicators
- ) Accelerates, decelerates, and swings crane in a smooth safe manner
- ) Verifies the load is not swinging prior to landing the load
- ) Responds to standardized hand signals from signal person
- ) Verifies slings are properly connected/free before continuing operations
- ) Keeps the hook clear of riggers while the slings are disconnected
- ) Ensures overall safety of the rigging team during crane operations
- ) Places the hook in a bucket (verify depth position)



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- ) Properly stores hardware/rigging gear following its use

### **Training Center Provided Material**

- ) PPE

### **Delegate Requirements**

- ) Must possess good physical health as the practical training is physical demanding.
- ) Must provide a Mobile Crane
- ) Rigging Gear (if onsite)

### **Reference Material / Documents**

OSHA 29 CFR 1910.180  
OSHA 29 CFR 1926.1400  
API RP 2D 7<sup>th</sup> Edition