

Sample Lesson Plan
Construction Training Program (10-hour)
Cranes

Introduction

A crane consists of a rotating structure for lifting and lowering horizontally on rubber tires or crawler treads. Types of cranes are:

- Mobile
- Hydraulic
- Overhead
- Gantry
- Tower

Instructor's activities

- PowerPoint presentation.
- Discuss 29 CFR 1926 Subpart N
- Participant feedback

Learning Objectives and Outcomes

I. Major causes of crane accidents

- A. Contact with power lines
- B. Overturns
- C. Falls
- D. Mechanical failures

II. Required pre-planning in order to put a crane in service

- A. Ensure the crane is on a firm, supported surface, and is level within 1%
- B. Determine the location of overhead power lines
- C. Know the job site conditions (e.g. unstable soil or high winds)
- D. Make other personnel on the job site aware of hoisting activities
- E. Barricade access within the swing radius
- F. Ensure a competent person inspects all machinery and equipment prior to each use
- G. Consider the load limiting factors
- H. Consider lifting principles

III. Precautions that apply to working with cranes near power lines

- A. Stay clear of all power lines. Clearance distance should be at least 10 feet, and at least 16 feet for 750 kV or higher.
- B. Have an observer or “spotter” who has a clear view of the power lines and the working crane at all times. The crane operator and observer must be able to see each other and communicate

References

OSHA Standard: 29 CFR 1926 Subpart N (1926.550 to 1926.556)

http://www.osha-slc.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10928

OSHA Publications

<http://www.osha-slc.gov/OshDoc/Additional.html>

- 3100 Crane or Derrick Suspended Personal Platforms

OSHA References/Resources

- Electronic Library of Construction Occupational Safety and Health
Safety Hazards - Cranes and Hoists

http://www.cdc.gov/elcosh/docs/hazard/safety_cranes.html

- OSHA Technical Links - Crane, Derrick and Hoist Safety

<http://www.osha-slc.gov/SLTC/cranehoistsafety/index.html>

- OSHA Technical Links - Construction - Crane, Derrick and Hoist Safety

<http://www.osha-slc.gov/SLTC/constructioncrane/index.html>

- Video - Crane Safety for the Site Superintendent

<http://www.osha-slc.gov/SLTC/multimedia.html>

<http://www.osha-slc.gov/SLTC/video/cranesafety/video.html>

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