

U.S. Department of Labor  
Occupational Health and Safety Administration

Cranes and Derricks Negotiated Rulemaking Advisory Committee

Meeting Summary - October 1-3, 2003

**Agenda Review**

C-DAC members reviewed and accepted the October meeting agenda.

**Review and Approve September 3-5 Meeting Summary**

C-DAC members reviewed the September 3-5 draft meeting summary and made editorial changes. It was approved as final and will be available through the OSHA docket.

**Ground Rules**

The ground rules were approved by C-DAC members present at the September 3-5 meeting, and have since been approved by the three members absent from that meeting. The ground rules, as revised on September 3, are the final C-DAC ground rules.

**Review Draft Regulatory Text**

C-DAC members reviewed the draft regulatory text that resulted from its discussions at the September 3-5 meeting and its September 16 conference call. The issues discussed included scope; assembly and disassembly; operation procedures; and signals.

**§1400 Scope:** The discussion of scope included clarification of the difference between rough terrain and all terrain cranes and the inclusion or exclusion of hydraulic jacking systems, also referred to as gantry jacking systems. The questions of inclusion or exclusion of pile drivers and the equipment for which there will be limited requirements were set aside for a future meeting.

**Rough Terrain and All Terrain Cranes:** Both will be included as examples of cranes covered under the standard.

**Hydraulic/Gantry Jacking Systems:** After a presentation about gantry jacking systems, from Kevin Johnston of J&R Engineering Co., Inc., C-DAC members discussed whether to include or exclude this equipment. Some members stated that it should be excluded because it is a "tool of the trade." Other members stated that it should be included

because it fits the type of equipment described in the scope, "power-operated equipment used in construction that can hoist, lower, and horizontally move a suspended load." Still others were concerned that if it is not covered under Subpart N, it will not be specifically covered under another standard. It was estimated that there are approximately 500-700 units in service. Crew size per unit is typically about 8-10 workers.

Some C-DAC members are opposed to including this equipment in the standard. However, if the C-DAC decides to include hydraulic jacking systems, the organization of at least one member opposed to its inclusion offered to develop a draft section on that equipment and present it to the Committee for consideration.

The Committee deferred the decision on including or excluding gantry jacking systems until its discussion of gantry cranes.

#### Tractors

There were no objections to removing "tractors" from the list of exclusions.

**§1410 - 14XX Erecting/Dismantling.** Members agreed to change the title "Erecting/Dismantling" to "Assembly and Disassembly," since that is the term that is more commonly used in the industry. C-DAC members discussed crane assembly and disassembly procedures. The key issues discussed included the person(s) responsible for overseeing crane assembly and disassembly; key hazards; and routine and complex conditions. C-DAC members reviewed drawings from the *Mobile Crane Manual*, published by the Construction Safety Association of Ontario. There was agreement that inclusion of illustrations in the standard would be helpful. The Committee will review the illustrations of hazards from the manual in detail at a later date.

#### Selection of Employer Procedures

With regard to the selection of employer procedures, the Committee agreed that where there is a specific manufacturer prohibition, the employer procedures must abide by that prohibition.

Person(s) Overseeing Crane Assembly and Disassembly: C-DAC members agreed that a competent and qualified person needs to oversee assembly and disassembly activities. These qualities would include both authority over the crew and the requisite expertise regarding assembly/disassembly. The Committee also agreed that these qualities need

not be combined in one person, but that the oversight function could be performed by a combination of one qualified person and one competent person.

Key Hazards: C-DAC members reviewed the draft regulatory text related to hazards and agreed that rather than specify particular “means and methods” for crane assembly and disassembly, the standard should include a listing of hazards that the competent and qualified person would be responsible for addressing.

Routine/Complex Conditions: C-DAC members noted that there is no difference in the complexity of assembling and disassembling cranes except when that activity is performed in the air. The assembly and disassembly of a crane in the air increases the potential for accidents related to the center of gravity. Members preferred to add center of gravity to the list of responsibilities of the competent person rather than creating a separate section for “complex” conditions.

#### **§14XX Assembly/Disassembly: General Requirements** **Components and configuration**

The Committee agreed that this section needs to be tied-in to the section on equipment modification. Also, some members stated that there should be a post-assembly inspection/verification of the equipment to make sure that the configuration of the equipment is in accordance with the manufacturer.

#### **§1411 Assembly/Disassembly - Employer Procedures - General Requirements**

C-DAC members discussed who should develop the employer procedures and whether there should be a signature requirement. C-DAC agreed that the procedures should be developed by a qualified person but disagreed on whether someone should sign-off on them. The signature issue was tabled.

**§1412 Operation - Procedures:** C-DAC members discussed the operation procedures that employers must follow when manufacturer procedures are unavailable. The key issues discussed included who would develop the procedures, whether the procedures would be written and/or signed, the displaying of load capacity charts; and the displaying of special hazard warnings.

Sign-off on New Procedures: C-DAC members agreed that a qualified person needs to develop the procedures relating to the use of the equipment controls. However, the Committee agreed that operation procedures relating to structural aspects and load capacity need to be developed, documented and signed by a licensed professional engineer.

Displaying Load Charts: There was general agreement that load charts should be readily available in the cab of the crane. If the load charts are available electronically and the computer crashes, the crane operator would have to safely shut down unless there was already a back-up (such as a paper load chart) available.

Hazard Postings: Most C-DAC members agreed that if there were to be a requirement for special hazard warnings, it would be only for power lines. However, there was general agreement that this issue should be discussed when the Committee addresses the power line issue.

**§1413 Signals:** C-DAC members reviewed the draft regulatory text regarding signals. The key issues discussed included blind picks; signal requirements when the crane operator can see the load; standardization of signals; the stop/emergency stop signal; hands free devices; new signals; and elements of voice signals.

Blind picks: All agreed that signals should be required when an operator cannot see the load.

Signal requirements when the crane operator can see the load: C-DAC members discussed the need for signals at the start of the lift and to properly place the load. The challenge for the group was to capture, in regulatory language, the reality that crane operators often perform tasks without signals, such as when they are swinging the load.

Standardization of Signals: C-DAC members stated a preference for standardizing signals, but also agreed that when such signals are infeasible, the crane operator and signal person may agree on a non-standard signal. To clarify infeasibility, the regulations will include examples of when standard signals may be infeasible.

Stop/Emergency Stop Signal: C-DAC members clarified that though one person is authorized to give signals to the crane operator, anyone who becomes aware of a problem may give the stop or emergency stop signal and the crane operator must respond to it by safely stopping operations. This means that the crane operator must complete the tasks necessary to avoid hazards to workers, not that s/he must shut down all operations immediately. There was discussion on adding language that would make it mandatory for a person who becomes aware of a problem to give the stop signal.

Multiple Simultaneous Crane Functions: The Committee agreed to delete paragraph (j) because this is a typical part of the job and should not be treated differently.

Hands-Free Devices: The Committee discussed hands free devices and the limits of existing technologies. They agreed that hands free reception needs to be required for radio signaling.

New Signals: C-DAC members agreed that new technologies that do not fall under the categories of hand, voice, or visual signals may be used if they are as effective as the standard methods of signaling or where there is an industry consensus standard for the new signal.

Elements and Order of Voice Signals: The Committee agreed that the first element of voice signals should be function (such as hoist, boom, etc.), followed by: direction, distance/speed, and stop command.

#### Discussion of New Issues

##### **Training and Qualification Requirements:**

C-DAC members discussed requirements for crane operator qualifications. The key issues discussed included requirements for physical, written, and practical tests; testing by an accredited entity; varied requirements for different categories of cranes; state versus national requirements; and timing for introducing new qualification requirements.

Some C-DAC members stated that standardized crane operator qualifications will greatly contribute to worker safety and cited an Ontario study, which showed a significant decrease in fatalities after crane operator qualification requirements were introduced.

The discussion began with a presentation by Graham Brent, Executive Director of the National Commission for the Certification of Crane Operators (which he refers to as "CCO"). He spoke about CCO's crane operator testing program, which includes physical, written, and practical tests. The written exam is developed according to the Standards for Educational and Psychological Testing and is conducted by CCO, which is accredited to do so by the National Commission For Certifying Agencies. To maintain certification, crane operators must pass a written exam every 5 years. Certification is granted for the following crane categories: 1) below 17.5 ton telescoping boom; 2) above 17.5 ton telescoping boom; 3) lattice boom crawler; and 4) lattice boom truck.

Additionally, Mr. Brent explained that there were approximately 30-35 CCO written test administrations administered per month in the United States. The passage rate for CCO certification of non-specialist crane operators is 80%; it is 50-60% for specialist certification. The cost for obtaining a CCO certification depends on the type of crane, and ranges up to \$275.

Mr. Brent also stated that some states have passed laws requiring crane operator certification to operate in their states.

Physical Examination: CDAC members agreed that physical exams should be required every 3 years, which is in accordance with B30 standards. It was stated that mobile crane operators (driving cranes over the road) are required by the Department of Transportation to get physical exams every two years. The U.S. Army Corps of Engineers also requires a physical every two years.

Written Tests: C-DAC members generally agreed that crane operators should be required to pass a written test that is "valid and reliable" prior to operating a crane and every 5 years thereafter. There was disagreement about how to ensure that a test is "valid and reliable" test. There was discussion about whether the test should be developed according to Standards for Educational and Psychological Testing and conducted by accredited entities versus allowing employers to determine how to test his/her operators.

Practical Test: All agreed that crane operators should be required to pass practical exams prior to operating cranes.

Varied Requirements for Different Types of Cranes: Both the CCO and New York City models have different qualification requirements for different categories of cranes. C-DAC members agreed that the OSHA standard should also reflect such differences though there will be further discussion on how to classify cranes for qualifications.

State Versus National Crane Operator Certification: Many C-DAC members stated that there is a need for national crane operator qualifications, in part, because of the trend toward state licensing. They raised the concern that if the current trend continues, employers will need to obtain multiple state licenses, with different requirements and fees. Others argued that there is a need to preserve the ability of state/local jurisdictions to certify crane operators.

Timing for Introducing New Qualifications Requirements: All agreed that there would need to be a significant amount of lead-time for instituting any new requirements for crane operator certification. In addition, there was discussion about phasing-in crane operators with significant experience on particular pieces of equipment or with current state/local licenses.

### Public Comment

Jim Brown of AGC Indiana discussed the issue of responsibility for site/ground conditions and stated that Subpart R should not be used as a model for this because there is too much ambiguity in that provision. He suggested the use of Appendices, site erection plans, or other tools for clarification in the new standard.

William Mott of Hunt Construction spoke about the issue of the "controlling employer" and the difficulties in being responsible for other employers' employees.

Barry Epperson of the Associated Wire Rope Fabricators offered his association's assistance, as needed, to C-DAC.

Patrick Conroy of the Council on Certification for Environmental Health and Safety technicians spoke about Hawaii's difficult experience in certifying crane operators. Based on Hawaii's experience, Mr. Conroy urged C-DAC to create a federal standard for crane operator certification. He also described the process for establishing a legally defensible, psychometric certification exam. He also discussed the potential conflicts of interest if certification entities were also permitted to provide training.

Norm Hoffman of Bechtel Construction, spoke in favor of a national certification standard to enable his company's crane operators to work nationwide without needing to obtain licenses in each state. He said that Bechtel currently trains in-house or uses the CCO certification. They require subcontractors to use CCO-certified crane operators or, where operators with CCO certification are not available, to document that their operators meet B-30.5 qualifications.

Kevin Johnston of J&R Engineering Co., Inc., recommended against including gantry jacking systems in the crane standard and answered many questions from the Committee on the operations of such systems. He stated that there currently is no industry consensus standard for this type of equipment.

Hugh Pratt of Insulatus, Inc., suggested that the Committee encourage production of radios that allow two-way, non-interrupted communication between a crane operator and signal person.

### **Logistics**

**Meeting Dates/Locations:** OSHA has not yet confirmed Las Vegas as the location for the January meeting. C-DAC members will be notified as soon as the meeting location is determined.

**Power Industry Representative:** OSHA is continuing to work to identify and appoint a new C-DAC member to represent the interests of the power industry.

### **Next Steps**

**Documents:** The September 3-5 meeting summary will be revised as discussed and distributed as final. The facilitators will draft the meeting summary for this meeting and distribute it prior to the November meeting.

**Panels:** The Committee is continuing to invite participants for a panel on dedicated pile drivers and another for cranes on barges. People with recommendations for those panels should send them to OSHA by October 10, 2003.

**Conference call on Section 1411: Assembly of cranes:** To be held on Monday, October 20, 11:00-1:00 EDT.

**Revised Regulatory Text:** OSHA will distribute revised regulatory text prior to the next meeting.

**Illustrations of Assembly/Disassembly Hazards:** will be distributed electronically to C-DAC members.

## C-DAC Attendance - October 1-3, 2003

### **Present:**

Stephen Brown, International Union of Operating Engineers  
Michael Brunet, Manitowoc Cranes, Inc., Crane Manufacturers (AEM/CIMA)  
Stephen P. Charman, Viacom Outdoor, Inc., Outdoor Advertising Association of America (OAAA)  
Joseph Collins, Zachry Construction Corporation, American Road and Transportation Builders (ARTBA)  
Noah Connell, U.S. Department of Labor/OSHA  
Peter Juhren, Morrow Equipment Company, L.L.C.  
Bernie McGrew, Link-Belt Construction Equipment Co  
Larry Means, Wire Rope Technical Board, ASME  
Frank Migliaccio, International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers  
Brian Murphy, Sundt Construction, Associated General Contractors (AGC)  
George R. "Chip" Pocock, C.P. Buckner Steel Erection, Steel Erectors Association of America  
David Ritchie, The St. Paul Companies, Training and Testing  
Emmett Russell, International Union of Operating Engineers  
William Smith, Maxim Crane Works  
Craig Steele, Schuck & Sons Construction Company, Inc., National Association of Home Builders (NAHB)  
Darlaine Taylor, Century Steel Erectors, Co., Association of Union Constructors  
William J. "Doc" Weaver, National Electrical Contractors Association, Inc.  
Robert Weiss, Cranes Inc. and A.J. McNulty & Company, Inc., Allied Building Metal Industries  
Doug Williams, Buckner Heavylift Cranes, Specialized Carriers and Rigging Association  
Charles Yorio, Acordia  
Susan Podziba, Facilitator, Susan Podziba & Associates  
Alexis Gensberg, Facilitator, Susan Podziba & Associates

### **Absent**

Dale Shoemaker, Carpenters International Training Center  
Stephen Wiltshire, Turner Construction Company, Associated Builders and Contractors

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Approved - 11/5/03

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