

NOTE:

Text bounded by asterisk reflects concepts that were NOT discussed at the first meeting. [Text in brackets and highlighted] are questions or options.

1400 **Scope**

(a) This standard applies to power-operated equipment used in construction that can hoist, lower and horizontally move a suspended load. *This equipment may be powered/actuated/driven by any one or combination of the following means: hydraulic, mechanical (including, but not limited to: belt, chain, gear), electric.* Such equipment includes, but is not limited to: articulating cranes (including knuckle-boom cranes); crawler cranes; floating cranes; *cranes on barges*; locomotive cranes; mobile cranes (including all-terrain, commercial truck-mounted, and boom truck cranes); industrial (including carry-deck) cranes; service/mechanic trucks with a hoisting device; a crane on a monorail; tower cranes (such as fixed jib (“hammerhead boom”), and luffing boom); pedestal cranes; portal cranes; overhead/bridge cranes; straddle cranes; wheel-mounted cranes; derricks; *and variations of such equipment*, except for equipment listed in paragraph (c).

(b) *Attachments.* This standard applies to equipment included in paragraph (a) when used with attachments that connect or attach the tackle to the load for the purpose of hoisting/lifting, lowering and/or moving horizontally a suspended load. Such attachments include, but are not limited to: hooks, magnets, grapples, clamshell buckets, orange peel buckets, concrete buckets, drag lines, personnel platforms, augers or drills (when crane-attached or wire rope suspended) and pile driving equipment.

(c) *Exclusions.* This Subpart does not cover:

(1) equipment included in paragraph (a) that has been converted or adapted for a non-hoisting/lifting use. Such conversions/adaptations include, but are not limited to, power shovels, excavators and concrete pumps.

(2) hydraulic and cable-operated excavating equipment, such as power shovels and backhoes/excavators.

(3) automotive wreckers and tow trucks when used to clear wrecks and haul vehicles.

(4) service trucks with mobile lifting devices designed specifically for use in the power line and electric service industries, such as digger derricks (radial boom derricks), * when used in these industries for auguring holes and to set power and utility poles.*

(5) vehicle-mounted aerial devices (for lifting personnel) and self-propelled elevating work platforms.

- (6) hydraulic jacking systems
- (7) stacker cranes.
- (8) powered industrial trucks (forklifts).
- (9) mechanic's truck with a hoisting device *when used in activities related to equipment maintenance* [add capacity limit?] [need explanation for why this is excepted].
- (10) equipment that hoists by using a come-a-long or chainfall.
- (11) dedicated pile drivers.
- (12) tractors.

(d) *Limited requirements.* The only requirements in this standard that apply to equipment with a manufacturer-rated *hoisting/lifting capacity* below 2000 pounds are in Sections 14XX through 14XX.

1401 **General Requirements**

Sections 1410 – 14XX apply to all equipment except equipment with a manufacturer-rated *hoisting/lifting capacity* below 2000 pounds.

1410 **Erecting and Dismantling – Selection of Manufacturer or Employer Procedures**

When erecting and dismantling equipment (or attachments), the employer shall comply with either:

- (a) all manufacturer procedures applicable to erecting and dismantling, or
- (b) employer procedures for safe erecting and dismantling. Employer procedures may be used instead of manufacturer procedures *only where the employer can demonstrate that the procedures used meet the requirements in section 1411*.

1411 **Erecting and Dismantling – Requirements for Employer Procedures**

(a) *When using employer procedures instead of manufacturer procedures for erecting or dismantling, the employer shall ensure that the procedures are designed to:

- (1) Prevent unintended dangerous movement, and to prevent collapse, of part or all of the equipment.

(2) Provide adequate support and stability of all parts of the equipment during the erecting and dismantling process.

(3) Locate employees involved in the erecting and dismantling operation so that their exposure to unintended movement or collapse of part or all of the equipment is minimized.*

(b) *Qualified person.* Employer procedures must be developed by a qualified person.

(c) *Certification.* Employer procedures must be certified by a qualified person and by the employer.

1412 **Operation – Procedures**

(a) The employer shall comply with all manufacturer procedures applicable to the operation of equipment, including its use with attachments.

(b) Where the manufacturer procedures are unavailable, the employer shall ensure compliance with all procedures necessary for the safe operation of the equipment. These procedures must be:

- (1) Developed by a qualified person.
- (2) Certified by a qualified person.
- (3) *Certified by the employer of the operator.*

(c) *Attachments.* The employer shall not exceed the manufacturer's recommendations for the equipment's capacity, rating, or scope when using attachments. When these are unavailable, the employer shall comply with recommendations developed and certified by a qualified person.

(d) *Accessibility.*

(1) All procedures applicable to the operation of the equipment, including rated load capacities *(including load charts)*, recommended operating speeds, special hazard warnings, instructions and operators manual, shall be [located] [readily available] in the cab at all times for use by the operator.

(2) Where procedures are available in the cab only in electronic form: in the event of a failure which makes the procedures inaccessible, the operator must immediately cease operations or follow safe shut-down procedures until they are once again available.

(e) *Postings.* In addition to the requirements in paragraph (d), special hazard warnings must be conspicuously posted [so that it is in view of the operator.]

1413 Signals

(a) *General requirements.* The employer shall ensure that:

(1) * Signals to crane operators are used when _____ [when?] [in all instances when the operator's view of some part of the lift is obstructed (?)]*

(2) (i) Signals to crane operators must be hand, voice or audible. The Standard Method for the type of signals selected must be used (see Appendix ___ for hand; ___ for voice; ___ for audible).

(ii) *Special signals.* For operations or use of attachments not covered in the Standard Methods, the lift supervisor (where there is one), crane operator and signal person shall contact each other prior to the [crane/derrick operation] and agree on special signals. The special signals must not be in conflict with signals in the Standard Methods.

(3) The signals used (hand, voice or audible), and means of transmitting the signals to the operator (direct line of sight, video, radio, etc.), must be appropriate for the site conditions.

(4) During all crane [movements] [operations] the ability to transmit signals between the crane operator and signal person shall be maintained. If that ability is interrupted at any time, the operator shall stop all crane operations until it is reestablished and a proper signal is given and understood.

(5) If the operator becomes aware of a problem with the lift and needs to communicate with the signal person, the operator must stop [the lift.] [all crane movement.] [all crane operations.] Crane [movement] [operations] [the lift] shall not resume until the operator and signal person agree that the problem has been resolved.

(6) Only one person gives signals at a time, except for emergencies (see paragraph (7)).

(7) Anyone who becomes aware of a problem with a lift may alert the operator or signal person by giving the emergency stop signal.

(8) All directions given to the crane operator by the signal person shall be given from the operator's direction perspective.

- (9) Signals for multiple simultaneous crane functions may be given only where:
- (i) the employer [which employer?] determines that, considering the capabilities of the crane and the experience and skill of the operator and signal person, such operation can be done safely.
 - (ii) either the load is in full view of the operator or the hook is empty.

(b) *Radio, telephone or other electronic transmission of signals.*

- (1) The equipment used to transmit signals shall be tested before beginning [the lift] [lift operations] [crane/derrick operations].
- (2) Signal transmission must be through a dedicated channel.

(c) *Voice signals – additional requirements*

- (1) Prior to beginning [lift operations], the lift supervisor (if there is one), crane operator, and signal person, shall contact each other and review the Standard Voice Signals (see Appendix ___).
- (2) Each voice signal shall contain the following three elements, given in the following order:
 - (i) Direction.
 - (ii) Distance and/or speed.
 - (iii) Stop command
- (3) *Communication with multiple cranes/derricks.* Where the signal person is in communication with more than one crane/derrick, a system for identifying the crane/derrick each signal is for must be used, as follows:
 - (i) for each voice signal, prior to giving the direction, the signal person shall identify the crane/derrick the signal is for, or
 - (ii) an equally effective method of identifying the crane/derrick the signal is for must be used.

[Should (3) apply to all types of signal communication, or just voice?]

- (d) *Hand signal chart.* Hand signal charts must be either posted on the equipment or readily available at the site.

1414 Signal Person Qualifications

8/12/03

(a) The employer [which employer?] shall ensure that each signal person meets the Qualification Requirements in paragraph (e) prior to giving any signals.

(b) *Documented qualifications.* The requirement in paragraph (a) is met where the employer has documentation from a qualified evaluator showing that the signal person meets the Qualification Requirements (see paragraph (e)).

(c) Where the employer does not have documentation showing that the signal person meets the Qualification Requirements in paragraph (e), the employer is prohibited from using the individual as a signal person unless a comprehensive assessment demonstrates that the Qualification Requirements have been met. That assessment must include:

(1) A verbal or written examination of the individual to determine if they know, understand and are competent in the application of the Standard Method for the signals used.

(2) Observation of the individual giving signals during trial lifts.

(d) If subsequent actions by the signal person indicate that the individual may not meet the Qualification Requirements, the employer must not allow the individual to continue working as a signal person until a comprehensive assessment (or re-assessment) is made in accordance with paragraph (c) that confirms that the individual meets the Qualification Requirements.

(e) *Qualification Requirements.* Each signal person must:

(1) Know and understand the Standard Method (see Appendices __, __, and __) for the type of signals used.

(2) *Be competent in the application of the Standard Method for the type of signals used, in light of the equipment and conditions at the site.*

14XX . Requirements for equipment with a manufacturer-rated *hoisting/lifting capacity* below 2000 pounds.

DEFINITIONS

- Attachments* means any device that expands the range of tasks that can be done by the equipment. These include, but are not limited to: an auger, drill, magnet, pile-driver, and personnel platform.
- Audible signal* means a signal made by a distinct sound or series of sounds. Examples include, but are not limited to, sounds made by a bell, horn, or whistle.
- Come-a-long* means a mechanical device typically consisting of a chain or cable attached at each end that is used to facilitate movement of materials through leverage.
- Chainfall* see come-a-long.
- Dedicated pile-driver* is a machine that is designed to function exclusively as a pile-driver. These machines typically have the ability to both hoist the material that will be pile-driven and to pile-drive that material.
- Dedicated Channel* -- A line of communication [assigned to] [used by] only one signal person and crane/derrick.
- Procedures* include, but are not limited to: instructions, warnings, specifications and limitations
- Paragraph* refers to a paragraph in the same section of this Subpart that the word paragraph is used, unless otherwise specified.
- Qualified Evaluator* means an entity that has demonstrated that it is competent in accurately assessing whether individuals meet the Qualification Requirements in this Subpart for a signal person.
- Qualified Person* means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrated the ability to solve/resolve problems relating to the subject matter, the work, or the project.
- Section* means a section of this Subpart unless otherwise specified.
- Standard* means this Subpart unless otherwise specified.
- Special hazard Warnings* means warnings of site-specific hazards (for example, proximity of power lines)

8/12/03

Standard Methods means the protocols in Appendices for hand, voice and audible signals.

Unavailable procedures means procedures that are no longer available from the manufacturer or have not been supplied by the manufacturer.

Equipment means equipment covered by this subpart.

DRAFT REGULATORY TEXT