



Signal Person Requirements in OSHA's New Crane Rule

September 22, 2010

1. PURPOSE

The safety of equipment operations depends in many situations on signals given to the operator. It is critical that the operator understand the signals given, and the signals person must therefore be able to give clear, accurate and appropriate signals that clearly convey the needed information.

2. DEFINITIONS (1926.1401)

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.

Competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Dedicated channel means a line of communication assigned by the employer who controls the communication system to only one signal person and crane/derrick or to a coordinated group of cranes/derricks/signal person(s).

Directly under the load means a part or all of an employee is directly beneath the load.

Qualified evaluator (not a third party) means a person employed by the signal person's employer who has demonstrated that he/she is competent in accurately assessing whether individuals meet the Qualification Requirements for a signal person.

Qualified evaluator (third party) means an entity that, due to its independence and expertise, has demonstrated that it is competent in accurately assessing whether individuals meet the Qualification Requirements 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.

Standard Method means the protocol in Appendix A for hand signals.

3. GENERAL REQUIREMENTS (1926.1419)

- (a) A signal person must be provided in each of the following situations:
 - (1) The point of operation, meaning the load travel or the area near or at load placement, is not in full view of the operator.
 - (2) When the equipment is traveling, the view in the direction of travel is obstructed.
 - (3) Due to site specific safety concerns, either the operator or the person handling the load determines that it is necessary.
- (b) Types of signals. Signals to operators must be by hand, voice, audible, or new signals.
- (c) Hand signals.
 - (1) When using hand signals, the Standard Method must be used (see Appendix A). Exception: Where use of the Standard Method for hand signals is infeasible, or where an operation or use of an attachment is not covered in the Standard Method, non-standard hand signals may be used in accordance with paragraph (c)(2) of this section.
 - (2) Non-standard hand signals. When using non-standard hand signals, the signal person, operator, and lift director (where there is one) must contact each other prior to the operation and agree on the non-standard hand signals that will be used.
- (d) New signals. Signals other than hand, voice, or audible signals may be used where the employer demonstrates that:
 - (1) The new signals provide at least equally effective communication as voice, audible, or Standard Method hand signals, or
 - (2) The new signals comply with a national consensus standard that provides at least equally effective communication as voice, audible, or Standard Method hand signals.
- (e) Suitability. The signals used (hand, voice, audible, or new), and means of transmitting the signals to the operator (such as direct line of sight, video, radio, etc.), must be appropriate for the site conditions.
- (f) During operations requiring signals, the ability to transmit signals between the operator and signal person must be maintained. If that ability is interrupted at any time, the operator must safely stop operations requiring signals until it is reestablished and a proper signal is given and understood.

- (g) If the operator becomes aware of a safety problem and needs to communicate with the signal person, the operator must safely stop operations. Operations must not resume until the operator and signal person agree that the problem has been resolved.
- (h) Only one person may give signals to a crane/derrick at a time, except in circumstances covered by paragraph (i) of this section.
- (i) Anyone who becomes aware of a safety problem must alert the operator or signal person by giving the stop or emergency stop signal. (Note:§ 1926.1417(y) requires the operator to obey a stop or emergency stop signal, irrespective of who gives it.)
- (j) All directions given to the operator by the signal person must be given from the operator's direction perspective.
- (k) Communication with multiple cranes/derricks. Where a signal person(s) is in communication with more than one crane/derrick, a system must be used for identifying the crane/derrick each signal is for, as follows:
 - (1) For each signal, prior to giving the function/direction, the signal person must identify the crane/derrick the signal is for, or
 - (2) Must use an equally effective method of identifying which crane/derrick the signal is for.

4. RADIO, TELEPHONE, OR OTHER ELECTRONIC TRANSMISSION OF SIGNALS (1926.1420)

- (a) The device(s) used to transmit signals must be tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable.
- (b) Signal transmission must be through a dedicated channel, except:
 - (1) Multiple cranes/derricks and one or more signal persons may share a dedicated channel for the purpose of coordinating operations.
 - (2) Where a crane is being operated on or adjacent to railroad tracks, and the actions of the crane operator need to be coordinated with the movement of other equipment or trains on the same or adjacent tracks.
- (c) The operator's reception of signals must be by a hands-free system.

5. VOICE SIGNALS – ADDITIONAL REQUIREMENTS (1926.1421)

- (a) Prior to beginning operations, the operator, signal person and lift director (if there is one), must contact each other and agree on the voice signals

that will be used. Once the voice signals are agreed upon, these workers need not meet again to discuss voice signals unless another worker is added or substituted, there is confusion about the voice signals, or a voice signal is to be changed.

- (b) Each voice signal must contain the following three elements, given in the following order: function (such as hoist, boom, etc.), direction; distance and/or speed; function, stop command.
- (c) The operator, signal person and lift director (if there is one), must be able to effectively communicate in the language used.

6. HAND SIGNAL CHART (1926.1422)

Hand signal charts must be either posted on the equipment or conspicuously posted in the vicinity of the hoisting operations.

7. SIGNAL PERSON QUALIFICATIONS (1926.1428)

- (a) The employer of the signal person must ensure that each signal person meets the Qualification Requirements (paragraph (c) of this section) prior to giving any signals. This requirement must be met by using either Option (1) or Option (2) of this section.
 - (1) Option (1) - Third party qualified evaluator. The signal person has documentation from a third party qualified evaluator showing that the signal person meets the Qualification Requirements (see paragraph (c) of this section).
 - (2) Option (2) - Employer's qualified evaluator. The employer's qualified evaluator assesses the individual and determines that the individual meets the Qualification Requirements (see paragraph (c) of this section) and provides documentation of that determination. An assessment by an employer's qualified evaluator under this option is not portable—other employers are not permitted to use it to meet the requirements of this section.
 - (3) The employer must make the documentation for whichever option is used available at the site (paper or electronically) while the signal person is employed by the employer. The documentation must specify each type of signaling (e.g. hand signals, radio signals, etc.) for which the signal person meets the requirements of paragraph (c) of this section.
- (b) If subsequent actions by the signal person indicate that the individual does not meet the Qualification Requirements (see paragraph (c) of this section), the employer must not allow the individual to continue working as a signal person until re-training is provided and a re-assessment is made in accordance with paragraph (a) of this section that confirms that the individual meets the Qualification Requirements.

- (c) Qualification Requirements. Each signal person must:
 - (1) Know and understand the type of signals used. If hand signals are used, the signal person must know and understand the Standard Method for hand signals.
 - (2) Be competent in the application of the type of signals used.
 - (3) Have a basic understanding of equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads.
 - (4) Know and understand the relevant requirements of § 1926.1419 through § 1926.1422 and § 1926.1428.
 - (5) Demonstrate that he/she meets the requirements in paragraphs (c)(1) through (4) of this section through an oral or written test, and through a practical test.

8. TRAINING (1926.1430)







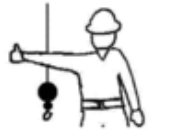












The employer must provide training as follows:

- (a) Signal persons. The employer must train each employee who will be assigned to work as a signal persons who does not meet the requirements of § 1926.1428(c) in the areas addressed in that paragraph.
- (b) Competent persons and qualified persons. The employer must train each competent person and each qualified person regarding the requirements of this subpart applicable to their respective roles.
- (c) Training administration.
 - (1) The employer must evaluate each employee required to be trained under this subpart to confirm that the employee understands the information provided in the training.
 - (2) The employer must provide refresher training in relevant topics for each employee when, based on the conduct of the employee or an evaluation of the employee's knowledge, there is an indication that retraining is necessary.
 - (3) Whenever training is required under this standard, the employer must provide the training at no cost to the employee.

9. APPENDIX

- (a) Appendix A – Standard Hand Signals

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 <p>STOP – With arm extended horizontally to the side, palm down, arm is swung back and forth.</p>	 <p>EMERGENCY STOP – With both arms extended horizontally to the side, palms down, arms are swung back and forth.</p>	 <p>HOIST – With upper arm extended to the side, forearm and index finger pointing straight up, hand and finger make small circles.</p>	 <p>LOWER THE BOOM AND RAISE THE LOAD – With arm extended horizontally to the side and thumb pointing down, fingers open and close while load movement is desired.</p>	 <p>MOVE SLOWLY – A hand is placed in front of the hand that is giving the action signal.</p>	 <p>USE AUXILIARY HOIST (whipline) – With arm bent at elbow and forearm vertical, elbow is tapped with other hand. Then regular signal is used to indicate desired action.</p>
 <p>RAISE BOOM – With arm extended horizontally to the side, thumb points up with other fingers closed.</p>	 <p>SWING – With arm extended horizontally, index finger points in direction that boom is to swing.</p>	 <p>RETRACT TELESCOPING BOOM – With hands to the front at waist level, thumbs point at each other with other fingers closed.</p>	 <p>CRAWLER CRANE TRAVEL, BOTH TRACKS – Rotate fists around each other in front of body; direction of rotation away from body indicates travel forward; rotation towards body indicates travel backward.</p>	 <p>USE MAIN HOIST – A hand taps on top of the head. Then regular signal is given to indicate desired action.</p>	 <p>CRAWLER CRANE TRAVEL, ONE TRACK – Indicate track to be locked by raising fist on that side. Rotate other fist in front of body in direction that other track is to travel.</p>
 <p>RAISE THE BOOM AND LOWER THE LOAD – With arm extended horizontally to the side and thumb pointing up, fingers open and close while load movement is desired.</p>	 <p>DOG EVERYTHING – Hands held together at waist level.</p>	 <p>LOWER – With arm and index finger pointing down, hand and finger make small circles.</p>	 <p>TROLLEY TRAVEL – With palm up, fingers closed and thumb pointing in direction of motion, hand is jerked horizontally in direction trolley is to travel.</p>		
 <p>LOWER BOOM – With arm extended horizontally to the side, thumb points down with other fingers closed.</p>	 <p>EXTEND TELESCOPING BOOM – With hands to the front at waist level, thumbs point outward with other fingers closed.</p>	 <p>TRAVEL/TOWER TRAVEL – With all fingers pointing up, arm is extended horizontally out and back to make a pushing motion in the direction of travel.</p>			