

## Equal Jobsite Responsibility

Will added signal verbiage in the standards make the industry safer?



California is the most recent state to enforce crane operator certification requirements. Shown here is the San Francisco Bay Bridge project, one of thousands of jobs in the state employing the use of cranes.

By Jeff York

In California, mandating crane operators to be NCCCO certified is leading the industry in a positive direction. It has given the operator specific responsibilities he must adhere to, and companies that only want a crane operator “from the neck down” has become a thing of the past. But in my opinion, certification shouldn’t stop at the operator. Signal persons and riggers need to be just as responsible for their actions as crane operators, and until they are required to be certified, there is still a flaw in the system.

### Signal person requirements

Before last year, signal person require-

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ments and verbal signals were non-existent in national standards, leaving people who are just entering the crane and rigging industries, as well as industry veterans, with little to go by. In the 22 years that I’ve been a crane operator, I’ve heard every kind of signal you could possibly imagine. In a lot of instances, the signal person has received no training and wants to ad-lib his own signals. Only a select few operators try to enforce proper signal use because they are worried about their own liability, which often comes with the label of being a bad guy. The bottom line: Poor communication between the operator and the signal person is a recipe for disaster.

However, in November 2004, ASME published the latest edition of the B30.5 standard and expanded its coverage of signaling during crane operations by more thoroughly addressing hand and voice signals. According to ASME B30.5, the communication between the crane operator and the signal person shall be maintained continuously during all crane movements, and if there is a disruption in this communication, the crane operator shall stop all operations until this communication is restored and the proper signal is given and understood. Standard signals to the op-

erator shall be in accordance with those listed in the ASME B30.5 standards, and all signals must be understood.

Prior to giving signals to a crane operator, the signal person shall be tested by a designated person and must demonstrate (1) a basic understanding of crane operators and limitations, (2) standard hand signals as described in ASME B30.5 standard if hand signals are used, and (3) standard voice signals described in the ASME B30.5 standard if voice signals are used.

Released in mid-2004, the C-DAC Consensus document also identifies the necessity for signal person qualifications, including requirements for employers to ensure that each signal person meets the qualification requirements prior to giving any signals. According to C-DAC, qualification requirements contend that each signal person must:

1. Know and understand the 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 crane operation and limitations, including the crane dynamics involved in swinging

## ► Trends

and stopping loads and boom deflection from hoisting loads.

4. Know and understand the relevant requirements of general signal requirements; hand signal chart; voice signals; and radio, telephone, or other electronic transmission of signals.

5. Demonstrate that he/she meets the qualification requirements through a verbal or written test and through a practical test.

Qualification requirements shall be met by using one of two options: Option 1 provides the signal person has documentation from a third-party qualified evaluator showing that the signal person meets the qualification requirements, while Option 2 shows the employer has its qualified evaluator assess the individual and determines that the individual meets the qualification requirements. However, an assessment by an employer's qualified evaluator under Option 2 is not portable, meaning other employers are not permitted to use the assessment to meet the requirements.

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 re-training is provided and a reassessment is made that confirms that the individual meets the qualification requirements.

While these standards now state that anyone who works with a crane needs formal testing to signal, it's not actively being enforced. OSHA is very busy working to ensure that the crane operators have the NCCCO certification, and in a lot of instances, OSHA fails to produce enforcement for the signal person or the rigger. What you have is a breakdown in the system at another level.

### ASME B30.5 verbal signals

Another addition to ASME B30.5 is verbal signals, in which verbal crane signals shall contain three elements: function and direction, distance and/or speed, and function stop. While includ-

ing verbal signals is a step in the right direction, the methods must be clearly understood by the operator and signal person.

For example, when a person signals a crane in a multi-function method like the distance method, it has to be understood that not everyone that signals a crane has a good handle on depth perception. By telling someone that you're 20 feet from the ground when you're actually 50 feet from the ground, you're adding a variable that can't be controlled. Speed is a method that's much easier for people to gauge.

The Signal-Rite verbal signal system's speed method uses three speeds when signaling a crane: slow, medium, and fast. If one of the three speeds is not fast or slow enough, the signal person just belts out a one-word command: faster or slower. When the operator is comfortable with a signal person, then they will pick up the pace, improving the speed and proficiency of the job. The amount of control the operator has over the hoist during the speed method is infinitely adjustable or variable, which you don't have with the distance method.

A typical set of signals might sound like this: "Operator, swing right ... trolley out ... down, down... easy swing ... easy trolley ... down easy ... trolley ... swing ... high." Note: To stop the hoist, "high" is used in place of "stop," which can be mistaken for "up".

For a mobile crane, you would give a "boom up" or "boom down" signal rather than a trolley signal for the tower crane. Distance may be given with the



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### Verbal Crane Signals (Conventional Cranes)

Hoist		Boom		Swing	
Fast	Up Up	Fast	Boom Up	Fast	Swing Right
Up	Up	Easy Boom	Easy Boom	Easy Swing	Swing
Up Easy	Up Easy	Stop	Boom	Stop	Swing
High	High				
Fast	Down Down	Fast	Boom Down	Fast	Swing Left
Down	Down	Easy Boom	Easy Boom	Easy Swing	Swing
Down Easy	Down Easy	Stop	Boom	Stop	Swing
High	High				
Travel	Travel Forward	Hooking / Unhooking From A Load			
Fast	Easy Travel	Up To Choke Down To Cut Loose			
Travel	Travel				
Fast	Travel Backward				
Easy Travel	Travel				
Travel	Travel				

Adjustments in Speed can be made with one word commands:  
Faster or Slower

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Signal-Rite's verbal signal system for mobile cranes.

speed method if the operator is working in the blind and must go back to the same spot every time. If you are working on a building job, and three sides of the building are in the blind, the signal person might say, "Trolley out 155 feet to clear the corner of the building."

However, with the distance method, there will be signalers that will do what I call "Crying Wolf," where they repeat the same signal over and over again. The reason this doesn't work is every time the signal person repeats that signal, the crane operator thinks that some sort of a signal change is forthcoming and will continue to pump the control lever because he is thinking he is going to get a stop or easy signal, when in actuality, he's getting a repeating, repeating, repeating signal. When someone comes to your house for a visit, you don't continuously tell them to "come in, come in, come in, come in and sit down, sit down, sit down, sit down." There's no need for it on a personal level, and there's certainly no place for it on a jobsite.

## What Makes a Good Signal Person?

1. A person who acts instead of reacts.
2. A person who is consistent.
3. A person who gears the crane up and down, avoiding abrupt starts and stops.
4. A person who is clear, calm, and concise with the standard set of signals.
5. A person who does not improvise or make up signals.
6. A person who does not repeat signals over and over.
7. A person who takes responsibility of ground obstacles, letting the operator know of potential hazards before they happen.
8. A person who is aware of his/her surroundings and keeps others aware of potential hazards.

### The operator's accountability

Although signal persons are required to learn and be tested on the hand and voice signals, it's not effectively enforced. Some signalers can be close-minded when you make them use a certain set of signals. They immediately say they've been signaling a crane for 20-plus years and have a hard time accepting a new system, whether or not it works better.

But now that crane operators are required to be licensed, they have extra responsibilities, including being responsible for every person that works under the crane hook. A lot of signalers are under the impression that they can

give whatever signal they want, but the fact of the matter is the signals are for the person behind the controls of the crane — not the signal person. Therefore, the crane operator should dictate what the signals will be.

A signal person can make or break an operator, which is why the he needs to be equally as qualified as the operator. Once this happens and it becomes an enforceable issue, the amount of accidents, incidents, and near misses will be reduced greatly. But until that day, the number of accidents will stay consistent, whether or not a crane operator has a license. ■

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