



MANAGING CONSTRUCTION RISKS

Accidents raise awareness about crane safety

Timothy G. Galarnyk

On March 15, 2008, seven people died as a result of a tower crane collapse in New York, N.Y. Then, on March 26, 2008, two workers died in Miami, Fla., when a tower crane collapsed. Again, on May 23, 2008, one worker was killed when an 800-ton (880 tonne) crawler crane toppled over near Kansas City, Mo. Once more, on May 30, 2008, two more workers died when a tower crane fell off its tower in New York, N.Y. Back-to-back crane-related accidents on June 11 and 12, 2008, left one worker dead and three injured at two construction sites in Dallas, Tex.

On July 18, 2008, a 2500-ton (2700 tonne) crane collapsed at a Houston, Tex., oil refinery project, killing four workers. Just five days later in nearby Smithville, Tex., an overloaded crane collapsed, killing one man on a bridge removal project. This was followed by the toppling of a crane hoisting a church steeple in Oklahoma City, Okla., on July 24 that killed an 80-year-old observer. The same day, in Normal, Ill., a 33-year-old Ironworker was killed when a crawler crane collapsed onto his work basket.

The construction industry needs to step up its efforts to avoid these accidents by complying with crane manufacturers' operator manuals, following existing Occupational Safety and Health Administration (OSHA) rules, and observing basic safety procedures.

In May 2008, the U.S. government added 13 deaths to the previously reported figures from the U.S. Department of Labor Bureau of Labor Statistics (BLS), changing the total to 1239. This is a staggering number, considering that the death rate among construction workers is more than 10 per 100,000 employees.

Cranes were linked to 72 worker deaths in 2006, according to the figures released by the BLS in April 2008. The website www.craneaccidents.com notes that 114 crane-related deaths occurred in 2008 as of July 30. From 1997 through 2006, the BLS reports that 818 deaths involved cranes. In addition, the property damage is in the hundreds of millions of dollars. What is causing the increasing number of crane fatalities? And what is necessary to prevent future occurrences?

Disregard of regulations a problem

Federal regulations governing the use of cranes in construction are contained in section 29 of the Code of Federal Regulations (CFR) 1926.550. These rules relating to the basic operation of a crane fill less than two pages. Crane regulations contained in section 29 CFR 1926.550 subpart N of the rules are being rewritten. In 2002, OSHA began rewriting the regulations, but as of the middle of 2008, OSHA still has not released new rules.¹

New rules might not solve the problem, however. The preliminary facts released about the numerous crane fatalities that have happened already this year reveal that, had existing crane safety standards been followed, the incidents would have been prevented. It is evident that the current rules and regulations are being overlooked. More rules and regulations for the industry will have no effect if construction sites do not follow them; they will only increase the total number of items under which OSHA can issue citations.

Another resource for mobile and locomotive crane safety is the American Society of Mechanical Engineers' B30.5-2007.² All crane operators should obtain a copy of these standards and follow them. Still, though, the most important standards that exist for every crane are the crane manufacturer's operator and user's guides. Most crane incidents would be prevented if the crane user would simply read and comply with the instructions and limitations issued by the manufacturer of the crane in use.

When purchasing a new or used crane, make sure that the crane is designed and manufactured by a reputable crane producer. The crane manufacturer will provide the operating instructions and criteria for safe setup, proper operation, and correct management of the equipment. If the crane is purchased secondhand at an auction or from a private seller, be sure that the crane is fully inspect-

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ed by a competent firm. A competent firm can perform a detailed inspection and can either make any repairs or ensure that repairs are done in accordance with the manufacturer's specifications.

A boom truck is one of the most commonly used cranes in operation today. It is portable, easy to acquire, and relatively easy to operate. However, because it appears to be so easy to operate, the boom truck is often involved in more serious failures.

In addition to following crane safety guidelines, the different sectors within the construction industry need to be aware of specific concerns within each of these sectors. In the precast concrete industry, crane operators need to be especially vigilant about the installation of proper lifting anchors and the use of correct rigging.



About the author



Timothy G. Galarnyk is CEO of Construction Risk Management Inc. (CRM). Galarnyk has more than 30 years of education, training, and field experience in construction and construction-risk management. He has traveled the world promoting construction-risk initiatives, injury and fatality prevention, and investigation of these events for legal adjudication.

Synopsis

The rate of crane and rigging injuries and deaths can be slowed by complying with existing rules and regulations and ensuring that each crane and all rigging has been inspected and is fit for its intended purpose.

Keywords

Crane, OSHA, regulation, rigging, safety.

Reader comments

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Lifting anchors add safety

In many nations, certified manufactured lifting anchors are required. Lifting anchors are designed and tested for lifting precast concrete elements in any direction and can be designed and installed in thin concrete panels with capacities up to 45 tons (50 tonnes). This type of lifting anchor could prevent a crane or rigging-related accident.

Federal and state OSHA regulations require that each piece of rigging be specifically rated and tagged with a rated capacity and safe working load limit (29 CFR 1926.251 subpart H governs rigging equipment for material handling). Still, a much better source is the manufacturer of lifting devices such as lifting anchors, alloy chain slings, synthetic and wire rope slings, synthetic slings, and all other material handling attachments and devices.

Precasters part of the solution

For the precast concrete industry to reduce the rate of crane and rigging injuries and deaths, it will need to appropriately manage the risks of construction. This includes complying with existing rules and regulations and ensuring that each crane and all rigging has been inspected and is fit for its intended purpose. Compliance is the most effective way to manage the risks associated with crane use.

References

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2. The American Society of Mechanical Engineers (ASME) Committee B30. 2007. *Mobile and Locomotive Cranes*. New York, NY: ASME.