Crane Safety

INCIDENT

A crane collapse in Seattle killed four people includes five companies. Bisnow/Shawna De La Rosa Cranes hover over the skyline in Seattle’s South Lake Union, the most crane-dense section of the city. IN 76 DAYS! DON’T MISS THE SOUTH FLORIDA CONSTRUCTION & DEVELOPMENT – South Florida Seaburg Construction, which employed the operator of the tower crane before workers began to dismantle it, now joins GLY Construction, Northwest Tower Crane Service, Omega Morgan and crane owner Morrow Equipment as the parties being investigated by the Washington State Department of Labor and Industries, according to a report by the Seattle Times.

The four people that died in the accident include experienced ironworkers Travis Corbet, a U.S. Marine and resident of Portland, and Marine Corp. Reservist Andrew Yoder of North Bend. Nineteen-year-old Sarah Wong from South Pasadena, California, and 71-year-old city of Seattle employee Alan Justad were killed in separate cars on Mercer Street, according to the Seattle Times.

Though the official investigation is months away from completion, speculation around what caused the crane accident now includes a combination of weather and human error, according to CNN. After reviewing video, trial attorney David L. Kwass, who has handled crane accident lawsuits, said it appeared that the pins connecting the crane’s segments may have been removed too soon.

Forecast gusty winds were blowing through the area at the time of the collapse. A meteorology report from Cliff Mass, local weather guru and professor of atmospheric sciences at the University of Washington, show wind gusts reached 35 mph at 3:26 p.m. at a weather station near the site just minutes before the collapse.

Six cars were hit and three other people, including a 4-month-old infant, were injured and taken to the hospital. Another person was injured but did not go to the hospital.

The incident took place in the South Lake Union neighborhood, one of Seattle’s fastest-growing areas. It is home to several tech companies, including Amazon.

The crane was in the process of being dismantled at the time of the accident.

The campus is being developed by late Microsoft co-founder Paul Allen's Vulcan Real Estate. Vulcan is responsible for much of the development in the area. The general contractor is Bellevue-based GLY, which is also the general contractor on Amazon Block 21, Seattle Cancer Care Alliance, Overlake Medical Center and Two Union Square, as well as several other projects.

The Google campus, set to be complete this quarter, sits on Mercer between the streets of Fairview and Boren, overlooking South Lake Union. According to reports, the crane fell off the building that was closer to Fairview.

The accident closed down Mercer Street, one of the busiest streets in the city, in both directions while the investigation is underway. Street repairs will need to be complete before the street reopens to traffic. Severe traffic congestion is expected.

Google will occupy the office space in the four-building, 607K SF project, which also includes 150 apartments, according to the Seattle Times. Google agreed to lease the space for 14 to 16 years, GeekWire reports.

For three years in a row, Seattle has had the most cranes in the country, a sign of the construction boom in the city, according to KOMO News. As of January, the number sat at 59. The region had another deadly crane accident in 2006 when a crane fell off a building in Bellevue, killing a man who was sitting in his apartment.

NEED TO KNOW

Cranes do most of the heavy lifting in industrial and construction workspaces – literally. They're some of the most essential equipment found in any production facility, job site or logistics hub.

Cranes are a constant presence in most industrial or construction contexts. This means the right safety measures should be just as ubiquitous. Without a focus on safe operation, any type of heavy equipment can become more of a liability than a benefit.

The massive cranes that transcend our skylines are imposing devices. Questions range… are the operators competent and qualified to operate?… how are operators trained?… who evaluates them? … is there re-training and refresher courses?… How is the safety of operators and workers in proximity ensured and monitored?

Today, manufacturing and construction industries move large, heavy loads. Careful training and extensive workplace precautions and improving technologies have been developed for those operations. There are significant safety issues to be considered for both operators of cranes including workers in close proximity.

Construction sites are among the most dangerous sites in all industry. Records are replete with injuries and fatalities. Osha itself says that approximately 75% of struck – by fatalities involve heavy equipment such as cranes and trucks.

Scrupulous adherence to safety must be demanded at all times in crane operations. If safety protocol is not strictly followed, death in the workplace will occur. You cannot take anything for granted or in other words be sloppy or flippant in administering the appropriate safety protocols relating to crane

operations.

Successful crane operations are dependent on a true partnership of owners of the project, workers and regulatory bodies. Each of the above have common interests.

- Complete the project or work on schedule.
- Do not incur additional costs.
- Serious injury or death is avoided.

Safety must be considered at every step in the value chain and designing safety. One of the key steps is choosing contractors with proven safety records to be partners. Choosing the right partners is the first step in the value chain.

The contractors have extensive safety manuals that include for example 100% Fall Protection where all employees working above 6 feet required tie off, and if there is no place to tie off safety then the rules state that no one is allowed to work until lifelines have been extended.

To be able to improve safety, it is important to measure leading indicators in additional to traditional lagging indicators.

Constructions sites should be documenting leading indicators such as near-misses to learn what went wrong and safety perception surveys to determine how safer worker's feel on a project.

BUSINESS / REGULATIONS

OSHA Proposes New Rule for Crane Operators in Construction

On May 18 2018, OSHA published its proposed rule for crane operators in construction to amend requirements in the previous rule from 2010. The proposed rule sought to remove the requirement for operators to be certified in the *capacity* of the crane being used. This would allow for more operators to be able to meet the requirement.

OSHA's Previous Rule on Crane Operators

In 2010 OSHA issued the final rule for cranes and derricks. This rule required crane operators to be certified by type of crane and the capacity of the crane. While this may sound like a logical requirement, the trouble is no certification existed for capacity of cranes, only for type. OSHA extended the deadline of compliance from 2014 to 2017 so that certification organizations could alter their programs to align with OSHA's new requirement. As of November 2017, no certification program included capacity, so OSHA extended the compliance date again until November of 2018 and put out a new proposed rule which would remove the requirement for capacity from the standard. According to the NCCCO (National Commission for the Certification of Crane Operators) OSHA does not believe it will be able to get the proposed rule passed in time for the November 2018 enforcement date, and requested until April 2019 as a proposed enforcement date.

Changes in the New Proposed Rule

To sum it up, there were three big changes included in the new proposed rule:

- Removal of the requirement to certify operators by capacity of the crane.
- Permanently maintain the employer's duty to evaluate its operators.
- Additional requirement for employers to pay for employees' certification with no cost to the employee.

Update: Rule Finalized, November 10, 2018 Enforcement Date

On November 5, 2018 OSHA released a memo stating the agency "does not intend to enforce the requirement that certification identify a lifting capacity for the certification." This means the proposed changes withheld and the requirements have been reducing from needing certification by *type and capacity* to just *type*.

There are now two important dates to be aware of:

- November 10, 2018: Enforcement begins, operators must have a certification by type of crane.
- February 7, 2019: Employers are required to evaluate operators to ensure they are licensed, certified, trained and evaluated. **(Optimum Safety Management)**

STATISTICS

A total of 323 construction worker deaths involving 307 crane incidents were identified from 1992-2006, an average of 22 construction worker deaths per year. There were 12 multiple-death incidents in this time period, resulting in a total of 28 deaths.

From 2011 to 2015, the Census of Fatal Occupational Injuries (CFOI) reported 220 total crane-related deaths, an average of 44 per year over this 5-year period. Men accounted for 217 of the 220 fatal injuries involving cranes. White, non-Hispanic workers accounted for 74 percent of fatal injuries involving cranes, while 14 percent involved Hispanic and Latino workers.

Crane related workplace fatalities and occupational injuries reached their lowest points since the CFOI started in 2003, amounting to 33 deaths in **2017**.

PREVENTION

There have been strides to improve crane operational safety in past decade. The improvement has been incremental but noticeable.

Yet even though they're a constant presence in the workplace and we may take them for granted, that doesn't mean we can ignore the dangers they pose. When operated with a focus on safety, cranes are vital pieces of equipment. When they're used carelessly, they can be a serious hazard to people and property. The majority of accidents in the workplace could have been prevented. With that in mind, here are the **top five crane safety tips** to help you avoid disastrous incidents in your workplace.

1. **Ensure crane equipment is only operated by qualified workers with the proper certifications and hours training on the equipment.**

Complex, heavy machinery requires specialized knowledge to operate safely. That's why an important element of crane lifting safety is confirming that employees who use it have the right expertise. Operators not only must know the

equipment inside and out, but they also need to be well-versed in all of the proper safety procedures. These include knowing the appropriate hand signals.

2. **Inspect both the equipment and the load before operation of lifting equipment.**

Operators must take a close look at their equipment before lifting. For example, visually checking cables and booms for any cracks or other signs of wear. If equipment appears to be damaged or worn, it must be taken out of service and repaired. Additionally, the loads should be inspected to guarantee they are properly secured. Confirming that the load does not exceed the limits of the equipment also is crucial for crane operation safety.

3. **Ensure ground workers are clear of the crane operation area and are nowhere beneath the load while the equipment is being operated.**

A safe worksite is everyone’s responsibility. Workers on the ground should be reminded frequently to keep a safe perimeter around cranes at all times. This is one precaution that needs to be reinforced at daily safety briefings. Planning lifting operations well in advance also means the area will be clear of people at the designated time.

4. **Ensure adequate time has been allocated for use of the crane to avoid rushing the task/project.**

A common cause of accidents is carelessness. This frequently stems from workers who are trying to cut corners and rush through their tasks. It is critical to plan operations so operators will have enough time to thoroughly inspect equipment and follow proper safety procedures.

5. **Review safety checklists or cards before operating the crane.**

Because cranes can be so complicated, it’s easy for certain procedures to be forgotten. That is why it is necessary to provide all employees with cards or checklists detailing safety protocols. This is imperative not only for crane operators, but also for all other workers on the job site. Employees should be encouraged to review the safety cards before they begin every shift. These checklists should be posted in prominent locations around the job site, as well as provided to everyone there.