Construction's "Fatal Four"

Out of 4,251 worker fatalities in private industry in calendar year 2014, 874 or 20.5% were in construction-related work. The leading causes of worker deaths on construction sites were falls, followed by electrocution, struck by object, and caught-in/between hazards.

The Bureau of Labor Statistics reports that these four categories were responsible for more than half (58.1%) the construction worker deaths in 2014.

- Falls — 349 out of 874 total deaths in construction in CY 2014 (39.9%)
- Electrocutions — 74 (8.5%)
- Struck by Object — 73 (8.4%)
- Caught-in/between — 12 (1.4%)

This month we'll discuss struck-by and caught-in hazards.

**STRUCK-BY HAZARDS**

Struck-by hazards exist when a worker can be injured by contact or impact by an object or piece of equipment. A stuck-by injury is when the impact alone causes the injury. A struck-by hazard can be any flying, falling, swinging or rolling object such as tools falling from an elevated work station, inadequate rigging causing a load to be dropped and vehicular traffic.

In 2014, there were 73 construction-related fatalities caused by struck-by hazards. This statistic represents a serious concern. Struck-by injuries are produced by forcible contact or impact between the injured person and an object or piece of equipment. Struck-by hazards are categorized as follows:

- Struck by flying object
- Struck by falling object
- Struck by swinging object
- Stuck by rolling object

An example of a struck-by hazard can be illustrated by one real life event – four workers were installing signs on a highway when a pick-up truck changed several lanes and entered the work area. The truck struck one of the workers, knocking him off the road and over a bridge rail. He fell approximately 18 ft. and died from his injuries. Another example would be when an employee was struck by a nail from a nail gun fired by another employee thru a wall made of wallboard.

Over the last five years, F&S employees reported 354 injuries as a result of being struck by an object or piece of equipment; or striking an object or piece of equipment.

- Metal shavings fell into an employee’s eye while the employee was drilling overhead.
- An employee was struck on the arm by improperly stored material.
- An employee suffered a cut to the head by a low-hanging fixture.

To better prevent struck-by incidents:

- Never position yourself between moving and fixed objects;
- Stay alert of heavy equipment and stay clear of lifted or suspended loads;
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- Check vehicles before each shift to assure that all parts and accessories are in safe operating
  condition and do not drive a vehicle in reverse gear with an obstructed rear view, unless it has an
  audible reverse alarm, or another worker signals that it is safe; and
- Wear appropriate PPE to include eye and face, head and high visibility clothing.

**CAUGHT-IN / BETWEEN HAZARDS**
A caught-in or -between hazard occurs when a person becomes caught, squeezed, crushed, pinched, or compressed between two or more objects or parts of an object. Unguarded moving machinery, unprotected excavations and trenches, working between moving materials and immovable structures, vehicles or equipment contribute to caught-in-between hazards. Workers must identify these hazards and avoid them while on the job.

Events (examples) that should be classified as caught-in include:
- Cave-ins (trenching)
- Being pulled into or caught in machinery and equipment (this includes strangulation as the result of clothing caught in running machinery and equipment)
- Being compressed or crushed between rolling, sliding, or shifting objects such as semi-trailers and a dock wall, or between a truck frame and a hydraulic bed that is lowering

Over the last five years, F&S employees reported 45 injuries as a result of being caught-in or -between equipment.
- An employee’s fingers were crushed under a manhole lid when the employee’s grip slipped.
- While adjusting the tension of the belts on an exhaust fan, an employee dropped a wrench. The wrench struck the power switch, turning the fan on. The employee’s hand was caught in the belt and pulled into the pulley.
- While mounting a tire to a wheel, an employee’s finger was crushed between the tire and the wheel.

Use machinery that is properly guarded, use proper lockout/tagout procedures, and de-energize equipment before performing maintenance. Never place yourself between moving materials, don’t work in an unprotected trench, and stay out of the swing radius of cranes and other equipment. The number of fatalities involving caught-in or -between hazards in the construction industry has actually decreased by about 20% since 2003. The biggest decrease in caught-in or -between fatalities in the construction industry has been in excavation or trench cave-ins. However, there were still 12 construction fatalities in 2014 as a result of caught-in or -between hazards.