# Overhead Hazards: Fatality Report

**INCIDENT**

A comparison in real time between a **Near-Miss/Close Call and a fatality.**

See a video online in which workers in Rio de Janeiro are repairing the 125-foot-high Christ the Redeemer statue after it was struck by lightning. In the video, the workers are tied off but are using a hammer and chisel that are not tied off and below is a crowd of people. In the middle of the video, one of the workers answers a call from his son on his cell phone, which also is not tied off.

In another example, a man delivering sheet rock to a construction site in Jersey City was killed by a tape measure. The independent contractor for a trucking company was leaning into a car window to speak with someone and when he pulled his head out, he was struck by a one-pound tape measure that had slipped out of a worker's hands 50 stories above.

Needless to say, if that worker on the statue in Rio de Janeiro had dropped his hammer and it had hit a visitor below, it likely would have caused a fatality.

**NEED TO KNOW**

The focus for all objects at heights should always be on preventing objects from falling rather than a catching object, or on limiting the damage after they fall.

**BUSINESS / REGULATIONS**

Fewer than 25% of construction workers think that all accidents are preventable. What is more clear that workers often view themselves as victims of accidents and not as the cause of accidents.

We expect workers at height to wear a fall protection harness and be tied off because we're trying to prevent people from falling.

But we need to stop things from falling in the same way we have worked diligently towards preventing people from falling.

To determine what kind of force an object falling from a certain height generates, calculations can be done around the physics of gravity. For example, an eight-pound wrench dropped 200 feet would hit with a force of 2,833 pounds per square inch – the equivalent of a small car hitting a one-square-inch area.

Most organizations have deployed a fall protection program for workers but have not deployed a drop prevention program for tools and equipment. Expanding a fall protection program to include tools and equipment is far easier for companies and

employees than creating a new program for drop prevention.

The difference between a fall protection program for humans and fall protection program for tools is only a matter of perspective: The first saves you; the second saves others.

While the most obvious person at risk when objects are dropped is the one underneath, the worker using the tool also can be at risk, as his knee-jerk reaction may be to catch or go after the falling object, which could cause him/her to lose balance and fall.

People are not designed to work at height. That's why they wear a fall protection harness. Tools are not designed for use at height either. That's why we also need to provide a fall protection harness and connection point for tools – so they easily can be tied off.

A harness for a person acts as the primary component of a personal fall protection system. However, for tools, we typically rely on secondary, passive systems, such as debris nets. We rarely deploy a primary system for tools and equipment.

**STATISTICS**

The third largest cause of death in the workplace, behind transportation incidents and workplace violence, is contact with objects and equipment, the majority of which are being struck by a falling object.

There are more than 52,260 recorded incidents of people being struck by falling objects in the last recording period, according to OSHA. This number likely is much lower than the actual number, of course, but this would mean that, on average, nearly 143 objects strike people every day – including Saturdays and Sundays – in the United States alone.

**PREVENTION**

An ounce of prevention, will yield much more than a pound of cure in Overhead Hazards with other objects.

**Dropped Objects Prevention – Best Practices and Solutions**

1. Expand fall protection programs to include tools and equipment.
2. Provide a competent person to manage the expanded program.
3. Raise awareness of drop hazard identification and mitigation techniques within the workforce.
4. Require risk assessments before performing work with drop hazards.
5. Consider regularly scheduled "hazard hunts" to drive awareness of drop hazards.
6. Consider using tethered tools. These tools either have built-in connection points placed by the manufacturer or can be retrofitted with connection points. Next, the tools are connected to a lanyard. This solution not only applies to small hand tools, but also can be used for tools and small pieces of equipment that weigh up to 80 pounds, such as rivet busters, portable generators, etc. Tethered tools mostly are used by larger construction companies and are not in wide use yet. But this may change, as younger workers tend to be more concerned with safety than veterans.
7. Consider using energy-absorbing lanyards, which will reduce the force associated with the dropped tool. Tools either can be connected to a worker through a tool belt, harness or wristband, or anchored to a fixed structure.
8. Tools that weigh more than five pounds should never be tied-off to a person. If a heavy object gets loose, the weight and force could dislocate a wrist or shoulder or even pull a worker over a ledge or scaffolding.
9. If a worker has a tool attached to him and needs to pass it off to a colleague, that colleague can connect to the tool before the passing worker disconnects

from it, ensuring the tool is 100 percent tied off and never has the opportunity to become a drop hazard.
10. Employees should be properly trained on how to use tethered tools. They must be taught how to attach a connection point to the tools, use the lanyards properly and respect the weight rating of the lanyards.
11. As a best practice, workers at height should only bring up the tools they need to do their job.
12. Hoist up items and then transfer them over with different lanyards to the workers themselves or to static anchor points. This can be done in a bucket, which can then house the extra tools. But many popular plastic buckets present other safety concerns, as they frequently fall over, spilling their contents.
13. There are many buckets, bags and pouches available on the market with closure systems to dramatically reduce the likelihood of items falling out. Some even close automatically when turned upside down.
14. A secondary solution to dropped objects are toe boards. Toe boards should be capable of withstanding a force of at least 50 pounds in any downward or outward motion.
15. Debris nets are another secondary solution and provides a way to catch dropped objects. Green netting that goes over buildings when they are being refaced in areas where there are a lot of pedestrians is the most recognized form, but there also is netting that is put up within the construction project, such as directly under work being done, to help stop objects from falling on workers below. However, nets can’t be the only solution, as objects often don’t fall straight down or are small enough to go right through the debris netting.

**Why is all the Preventive Procedures necessary?**

OSHA can use the General Duty clause to cite companies when dropped objects have caused injuries or are a hazard, but OSHA rarely cites a company for dropped objects under the General Duty clause. The clause says there must be a hazard; the hazard must be recognized; the hazard causes or is likely to cause injury or death; and the hazard must be correctable.