# Autopsy of an Injury

White Paper

Imagine you are the senior executive of a leading transportation organization. You're reviewing security camera footage and witness an employee climbing onto a shipping container to install a strap. After the strap is secured, the employee steps backward, stumbles on something, falls five feet and lands on his back. This is a real incident that took place some years ago. Fortunately, the injured employee was treated and released with only a minor bruise, but for the senior executive who witnessed the event, the lasting impression of the impact was far greater. The company had previously defined any fall of four feet or greater as having the potential for serious injury or fatality. This activity—climbing up and down a container unit—is something his employees did thousands of times a day. It was pure luck that the employee didn't suffer a much worse outcome.

Injury rates offer insights into an organization's pool of exposure, but the number and severity of incidents is also influenced by the simple element called luck.

## Exposure is a State of Vulnerability

Organizations that are serious about eliminating serious injury and fatality incidents know that safety does not truly improve until exposure is identified, controlled, reduced, or eliminated. Shrink the pool of exposure and the incident rate goes down. Injury rates offer insights into an organization's pool of exposure, but the number and severity of incidents is also influenced by the simple element called luck.

Let's picture another scenario. If an organization had 100,000 exposure events, it still could result in zero recordable or reportable injuries. It could also result in five, ten, or more. The zero outcome could be the result of the effectiveness of the layers of control set in place to protect the employee. Or it could be due to a series of lucky outcomes. With each exposure, the employees were subjected to a state of vulnerability or injury. The state of vulnerability is the same whether someone is hurt or not. For example, if an employee stands underneath another employee holding a hammer and the hammer falls, whether it lands on the employee's head or falls on the ground is simply a matter of chance. Either way, the exposure is still the same. That's why it's important for organizations to control exposure. Organizations who excel at defining safety procedures and engineering solutions shrink the pool of exposure—and minimize the dependency on the employee's behavior.

## 18 Million Exposures in One Activity

Let's return to the scenario of the fallen employee. A group of senior leaders reviewed the security footage and dissected everything that took place leading up to the fall. First, they witnessed the employee step backward without looking what was behind him. Second, he removed his hand from the handhold, moving away from the more controlled three-points-of-contact position to the more vulnerable two-points-of-contact. Then, his foot unexpectedly bumps into a raised portion of grating, causing him to lose his balance and fall. Fortunately, there was no protruding object or obstruction between his body and the ground. Instead, he fell on sand, which cushioned his fall. The employee was fortunate that he fell flat on his back instead of headfirst, which would have greatly compounded the force. A cement pad with a raised edge lay just four feet away from where the employee landed. Had he fallen there, the probability of serious injury would have been much higher.

After dissecting the footage, the senior leaders discussed how to prevent a recurrence—even before the presenter had completed his report out. They immediately suggested the simplest, employee-focused fixes. "Conduct more safety observations," said some. "Ramp up safety briefings, implement a safety stand-down, and initiate retraining," said others. Someone even asked the business unit leader whether he would terminate the employee for releasing the handhold, which was a violation of one of their procedures. Then, a DEKRA consultant asked the leadership team pointed questions:

"How often do people climb onto these units to do this task?" he asked.
"Two times for each unit loaded," they said.

"How many units are loaded per day across the system?"
"25,000."

Based on those numbers, there were a total of 50,000 exposures per day, or approximately 18 million exposures per year. Even if the calculation is off by 50%, that still equates to about 9 million exposures each year for this activity. By shifting the conversation away from employee behavior and reframing it in terms of exposure, the leadership team instantly recognized that the employees would have to perform preventive actions perfectly nearly 18 million times in a year, no matter the weather conditions, level of fatigue, or sense of urgency.

After this realization, the discussion moved away from what the employee did wrong to what the organization can do to ensure no one gets hurt like this again. The discussion suddenly took on a more preventive and less reactive quality as the senior leaders asked themselves a series of questions.

### "Why is there no guardrail?"

Because the units are over-the-road units with no place or space to install a guardrail. The units had been retrofitted with a handhold to allow three points of contact when employees climbed up, but no other support when they moved away from the unit's edge.

### "Why is the grating raised in one spot?"

The 55,000 units were retrofitted across several years to install the handhold. Someone made the decision that it would take much longer to fit a piece of grating in the opening to make it flush. Instead, they simply put a piece of grating over the opening.

They also asked:

### "When the handholds were installed, was there a prevention-through-design review?"

### "What can we do to systematically remind people about the unique exposures associated with this unit?"

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### "Is there a way to complete this activity without requiring people to climb onto the units?"

### "Do we really want to discipline people for making mistakes like failing to keep their eyes on a path or not maintaining three points of contact?"

These questions led to more probing questions, not only about exposure, but about the fairness of disciplining the employee—and whether the discipline system created the culture they desired.

From this example, it's clear that when leaders understand the pool of exposure, it changes the way they think about safety and prevention. By guiding the discussion toward total volume of exposure and ways to reduce that number, industry professionals can improve exposure control that protects workers each time they perform an activity—whether it's once or 18 million times.

## Reduce Exposure. Building Individual and Team Capabilities

The fallen employee incident illustrates the need for organizations to focus on exposures and empower employees to fully control (and, ideally, eliminate) all exposure. This is particularly true for the transportation industry, which has recordable injury rate per 100 FTEs of 4.4 and nearly 1,000 fatal injuries per year[1].

At the same time, organizational safety professionals need to be realistic. Engineering effective solutions doesn't happen overnight. Most solutions take years to fully implement. During that time, organizations must build both individual and team capabilities that trigger the right actions at the right time. And that's not limited to the actions required to provide the greatest level of exposure control. It also includes getting employees to slow down and consciously think through their actions. Organizations must systematically add layers of control, so that employees are empowered and equipped to make the safest decisions every day.

1. https://www.bls.gov/iif/oshwc/case/isn-transportation-and-warehousing-2015-19.htm

**Want to develop a team that takes the right action at the right time and achieves the greatest level of exposure control? Connect with us!**

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