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**ACCIDENT  
PRONE**

**Preventing mishaps  
on the dock**

| By Steve Greco

The seemingly innocent loading dock is one of the leading accident sites in warehouses.

**A**ccidents on the loading dock can lead to huge expenses. In addition to the direct costs of medical expenses, wage indemnity and claims administration fees, accidents entail many indirect costs. These can include equipment damage, lost productivity and quality, replacement labor costs, litigation, management and supervisor time, missed shipments, and damaged customer relations and public image.

That doesn't even take into consideration the expense of a crippling or fatal accident. Just one of these can easily cost an employer more than \$1 million in workers' compensation, product and equipment damage, lost productivity, higher insurance premiums and liability. Assuming a 10-percent profit margin, it would require \$10 million in additional sales to offset the cost of such an accident.

(Page 1 photo) Most accidents are caused by a combination of factors. In this case, there was no dock barrier in use, no trailer restraint to prevent the truck driver from pulling out, and no safety mechanism to prevent the dock leveler from bottoming out.

### Dock Risks

There are an estimated 100 opportunities a day, per shift, per single dock, for the most serious accident to occur. With this risk

multiplied by your number of working days per year, the possibility of occurrence increases quickly.

Some of the most common accidents are caused by trailer creep, unscheduled truck departures and lift-truck tip over.

In this article, we'll look at three of the most common risks and ways to reduce them:

- ▶ Trailer creep/separation and premature departure from the loading dock;
- ▶ Dock leveler safety features; and
- ▶ Driving into overhead door panels and off the end of empty docks.

### Trailer Restraints

There are basically three reasons to restrain trailers:

1. Prevent drivers from pulling out with the lift truck inside the trailer—or worse—partway into the trailer.
2. Prevent trailer creep that results in a dangerous gap between the dock and trailer.
3. The Occupational Safety and Health Administration (OSHA) requires it.

Although there are a number of types of restraints, they are not always effective, partly due to lack of use or human error. Here are some common types of restraints:

**Chocks:** The blocks that go in front of a truck's tires can go a long way toward preventing accidents. But many experts say they're not enough.

Depending on the surface conditions and type of chock being used, they can sometimes slip. Addition-



"Trailer creep" occurs when a trailer gradually shifts away from a loading dock, despite being parked there. Motion inside the trailer—usually caused by the stopping and starting of lift trucks inside—causes a gradual slide of the trailer away from the dock.

ally, chocking requires people to walk between trailers to place and remove chocks. This activity presents its own dangers.

A larger problem with wheel chocks is the difficulty in enforcing their use. Simply buying a set of chocks for each dock and putting up a couple of signs reminding drivers to use them is not going to be effective. Experience shows that this will provide minimal, if any, usage of the chocks.

**ICC Bar Restraints:** Devices that engage the rear-impact guard on trucks are a popular and more effective alternative to wheel chocks. These devices may be mechanically or hydraulically operated, and may vary significantly in design and functionality from one manufacturer to another. The better units will work with damaged or bent ICC bars and integrate with remotely controlled driver-lights communications systems.

**Other Types of Restraints:** Restraints that automatically engage the rear wheels of the trailer are also available. These will work with trailers that don't have ICC bar systems, such as low-boy trailers and trailers with lift gates.

However, they are more expensive than ICC bar restraints, and more susceptible to reliability and corrosion caused by ice, road salt and debris.

If most of your trucks have ICC-compliant systems, it probably makes sense to go with an ICC bar restraint and have wheel chocks on hand for occasional use.

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Conversely, if most are not ICC-compliant, then wheel-restraining systems might be justified.

## Dock Levelers

Differences in trailer width, height, floor levels, along with the recent popularity of air-ride suspensions are making dock levelers more critical for safe dock operation. Dock levelers can be raised or lowered to service trailer beds so that forklifts can travel in and out of the trailer safely.

Dock levelers come in mechanical and hydraulic models. The most common are pit-style, followed by edge-of-dock and vertical storing for application specific requirements.

Mechanical models require the operator to pull a chain, and then walk down on the leveler to engage it. They're typically less expensive to purchase, but more expensive to maintain.

Hydraulic models provide automatic functionality from push buttons typically mounted on the wall next to the dock door. They also offer a smoother transition when entering vehicles with soft suspensions, such as air-ride.

Mechanical levelers use a mechanical safety mechanism to prevent the dock from bottoming out if the lip purchase disengages from the trailer floor. Hydraulic levelers incorporate a hydraulic velocity fuse as a safety mechanism that allows for full functionality of the leveler as the trailer height changes.

## Door and Dock Barriers

Stand-alone barriers and barriers built into dock levelers can prevent driving—or the more likely scenario of backing—off the edge of the dock when the dock is empty and into the dock door when it's closed.

While dock levelers that use the lip as their safety barrier will provide some protection, regular impact to



Look for ICC bar restraints that can confine a wide variety of bars—including bent bars—such as this one, which is a non-impact, swing-up arm.

the lip can, especially over time, distort or damage the lip, ultimately taking the dock out of commission.

A more effective and convenient solution—and therefore more likely to be used—is barriers integrated into the dock-leveler platform. When raised, the dock guard protects forklifts from the dangers of the drop zone when the overhead door is open and the bay is empty. Unlike some other devices, it also acts as a pallet stop to guard door panels and tracks from regular impact damage when the overhead door is closed.

Look for a barrier that integrates into a company's entire dock operating system, has the heft to stop a loaded forklift, and lies flush with the deck when the dock is in use. Barriers that are positioned back from the door provide an extra margin of safety from the dangers of the drop zone.



Dock leveler safety features to look for include a maintenance stand that supports both the deck and lip; toe guards that protect over the full operating range; and fall-safe systems to prevent platform free-fall.



This dock barrier is designed to stop a 10,000-pound forklift traveling at 4 mph from falling off an open dock or striking a closed door. It's hydraulically activated and integrated to pop up when the dock leveler is in the "parked" position, yet it can be overridden when needed, such as hand unloading of delivery vans.

### Integrating the System

Using automatic dock equipment with electronic controls lets you integrate dock levelers, barriers and trailer restraints with signal lights that communicate to workers and truckers when it's safe to load—and when it's safe to move the trailer. Making the system easily controlled from an integrated control panel also increases the likelihood that all the dock safety devices will be used.

Devices such as red/green lights will signal to lift-truck operators when the restraint mechanism and the dock leveler are properly engaged and that it's now safe to enter the trailer, while at the same time notifying the driver that it's unsafe to pull away from the dock. Likewise, it will tell dock attendants when it's unsafe to enter the trailer and safe for the driver to pull away.

It's important to regularly inspect and maintain all dock equipment on a regular basis. In addition to initially training dock workers, you should also review safety procedures with them on a regular basis.

Time pressures involved with processing shipments can lead workers to overlook important aspects of safety in an effort to transfer loads quickly. Another note of caution: The driver of the tractor-trailer is likely to be the employee of another company and, as such, will have an entirely different approach to safety. With that in mind, many companies find it wise to provide a waiting room away from the dock for drivers.

With the right equipment and an ongoing emphasis on safety, it's entirely possible to prevent the three leading causes of warehouse accidents:

- ▶ Falls from high places, including docks.
- ▶ Forklift overturns.
- ▶ Unscheduled truck departures.

In doing so, you can help your customers practice safety and avoid costly accidents. **DDI**

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