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LOADING DOCK SAFETY:

Prevent Accidents, Increase Productivity

Who is Rite-Hite?

- A world leader in the manufacture, sale, and service of loading dock equipment, industrial doors, safety barriers, HVLS fans, industrial curtain walls, and more – all designed to improve safety, security, productivity, energy savings, and environmental control.

- Sell through a global distribution network who represent Rite-Hite on an exclusive basis throughout the world

- Customer base includes:
  - End users
  - Contractors
  - 3rd party logistic services
  - Any one that loads and/or unloads trucks and trailers

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Safety in the BIG PICTURE

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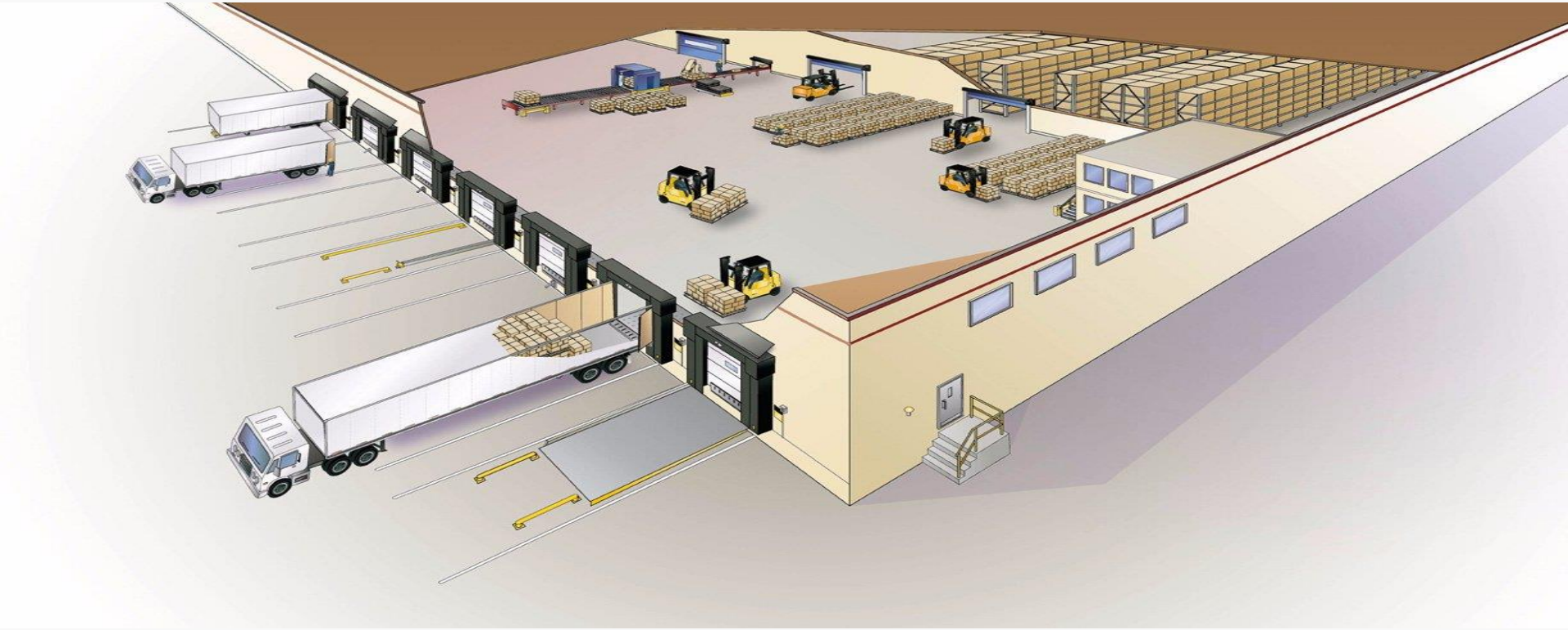
Defining the Material Transfer Zone



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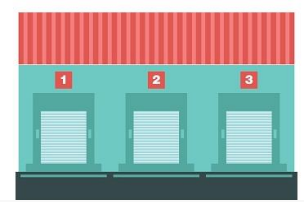
High % of accidents take place at the MTZ

Every 3 days someone is killed in a forklift related accident

An additional **94,750** forklift related injuries are reported each year

$135,000,000 in immediate costs are incurred due to forklift accidents



7% of forklift accidents occur when a lift truck is driven off a loading dock

70% off all reported accidents could have been avoided with proper safety precautions

*nist.gov, “Performance Metrics for Intelligence Systems Workshop” 2009

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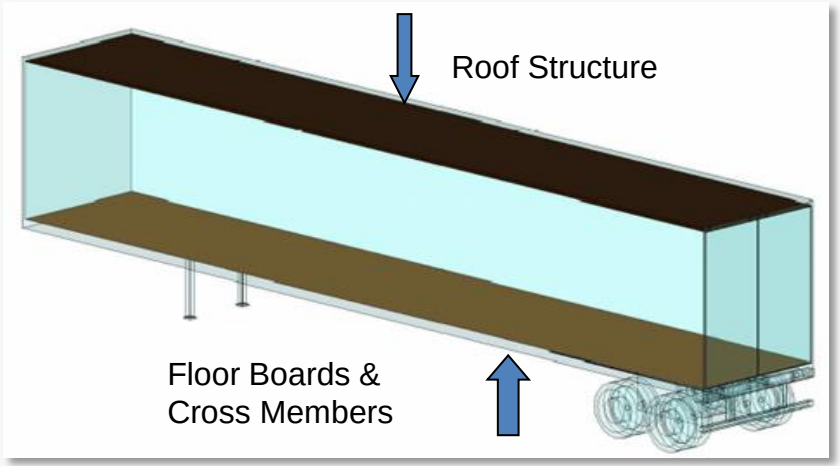
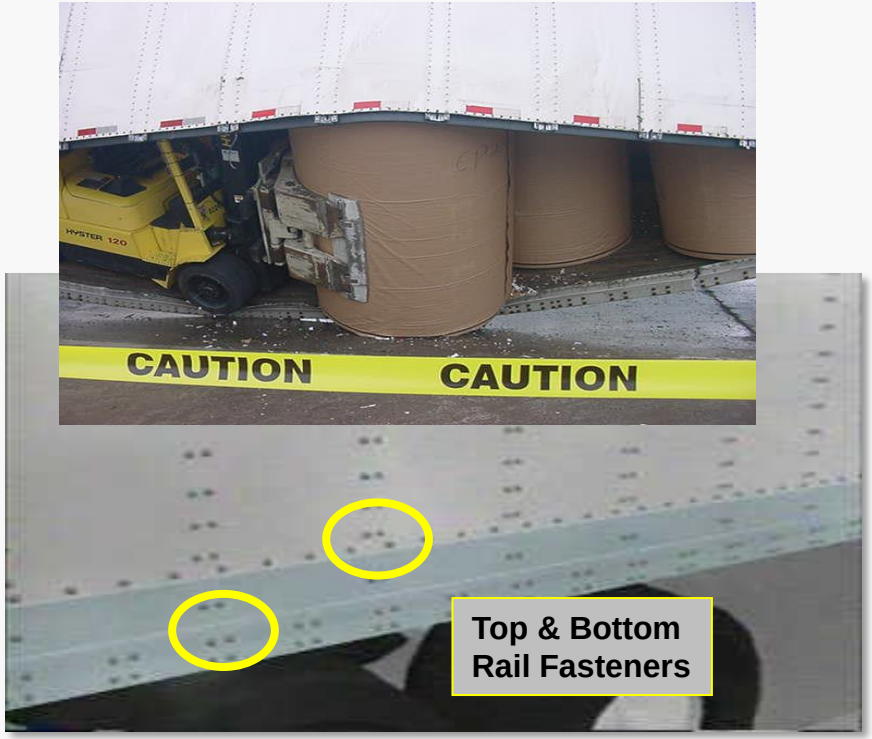
Risk Recognition within the M.T.Z.

- Trailer Hazards: Identifying damage during inspections
- Problem: Catastrophic trailer separation accidents
- Problem: Trailer drop
- Problem: Insufficient visual communication
- Problem: Landing gears fail
- Problem: Falls from dock platforms and vacant loading docks
- Problem: “Dock Shock”
- Best Practices for dock leveler maintenance
- Problem: Hot trailer marker lights can cause fires
- Problem: Is water creating a safety concern at your loading dock
- Problem: Area protection and pedestrian safety
- Problem: Intersection Safety
- Problem: Cargo Theft

Trailer Hazard: Identify Damage During Inspections

Follow guidelines for both exterior and interior inspections of trailer body





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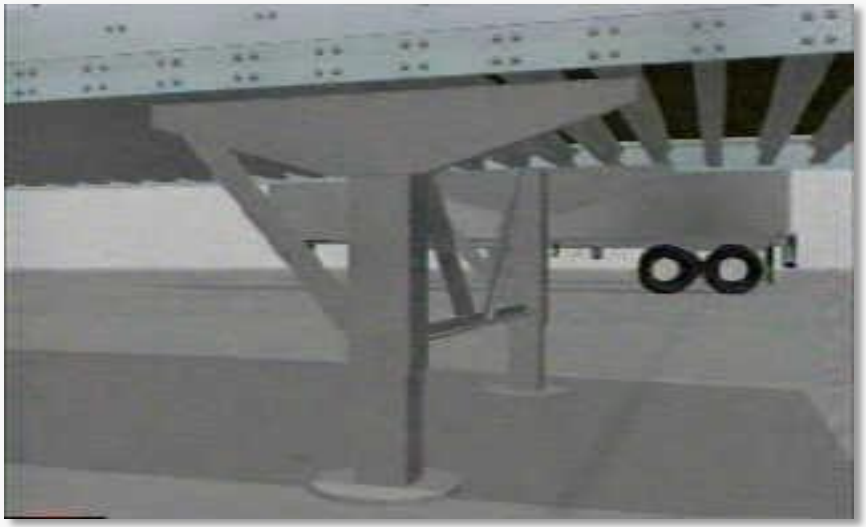
Trailer Hazard: Identify Damage During Inspections

Watch out for faulty landing gear
“Live Loading” (tractor attached) vs. Dropped Trailers (tractor detached)
Ref. Page 64 if A.I.A.G. M-6



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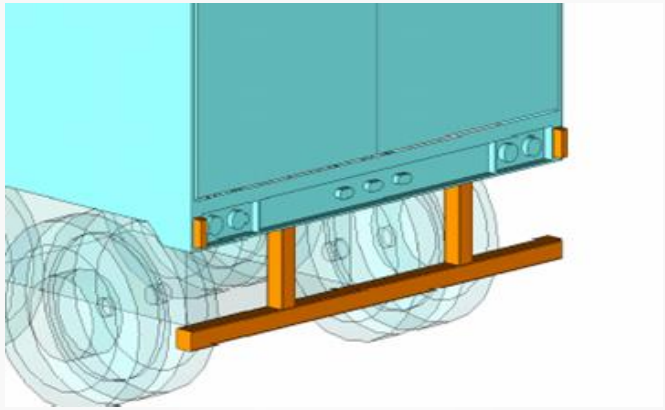
Trailer Hazard: Identify Damage During Inspections

Rear impact guards – visually inspect structural integrity



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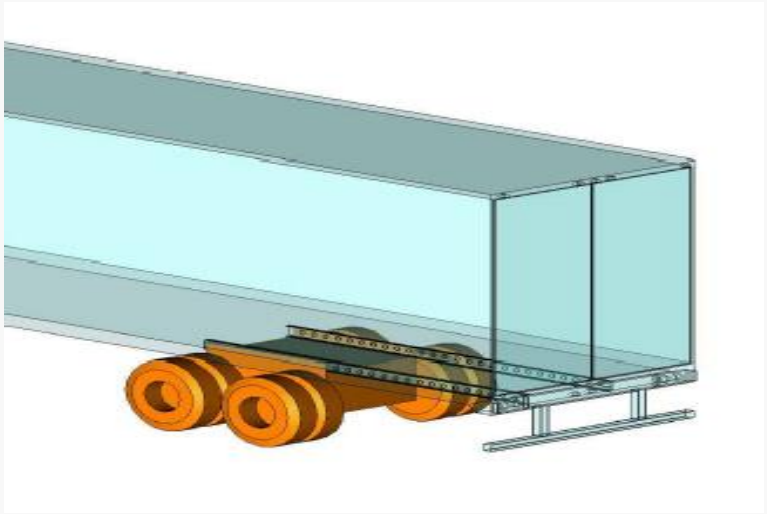
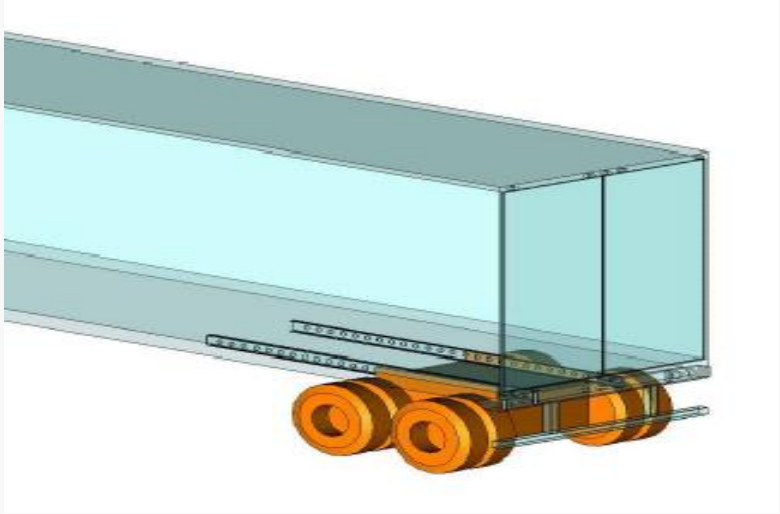
Trailer Hazard: Identify Damage During Inspections

- Which is considered a “best practice” when loading & unloading?
- Know your trailer design





Preferred location of Tandem Wheels

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Trailer Hazard: Identify Damage During Inspections

- Air-ride suspensions can lead to vertical and horizontal trailer movement as the forklift enters and exits the trailer
- Vertical trailer movement can cause uneven transition
- Horizontal trailer movement can lead to trailer separation from the dock

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Trailer Hazard: Identify Damage During Inspections

SECTION REVIEW “Prevention of Catastrophic Failures

- Establish checklist and train employees for exterior/interior inspections
- Perform inspection of cross members, roof structures, floor boards & top/bottom rails
- Don’t “ASSUME” someone else has inspected your trailer!

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Problem: Catastrophic Trailer Separation Accidents

Premature Departure

- A truck driver mistakenly drives away while a lift truck is entering, leaving, or inside the trailer

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Problem: Catastrophic Trailer Separation Accidents

Trailer Creep

- A trailer can move substantially under the weight of a forklift entering and exiting a trailer. Fast driving & air-ride suspensions exacerbate the issue.

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Problem: Catastrophic Trailer Separation Accidents

Landing Gear Collapse

- Weak or damaged landing gear gives way and the trailer pitches forward or falls to the side.

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PROBLEM: Catastrophic Trailer Separation Accidents

4. Trailer Pop-Up / Up-Ending

Pop-Up: the weight of a forklift sends the rear of the trailer forward and down, causing the nose to rise.

Up-Ending: the weight of a lift truck sends the trailer's nose down, causing the rear end to move up and away from the building. Remember, positioning of the rear tandems is important.

Trailer Pop-Up

Trailer Up-Ending

Problem: Catastrophic Trailer Separation Accidents

OSHA® Occupational Safety and Health Administration

1910.178 OSHA guide

(7) Brakes shall be set and wheel blocks shall be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading.

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Problem: Wheel Chocks May Not Prevent Trailer Separation

- False sense of security
- Driver can easily pull over chocks
- Even less effective on snow, ice and wet pavements
- Time consuming
- Often misplaced, lost or stolen

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Problem: Automatic Vehicle Restraints

Vehicle Restraints help prevent all types of trailer separation accidents

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Problem: Automatic Vehicle Restraints

Choosing the Right Vehicle Restraint is Critical

- Part-Time Safety:
  Vertical barrier vehicle restraints & dropped trailers with RIG bumpers
- All Manufacturers' Vertical Barrier Vehicle Restraints:
  Won't secure rear of trailer during landing gear collapse or trailer tip over!
- Vertical Barrier Vehicle Restraints Only Address 2 of the 4 Types of Accidents!

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Problem: Automatic Vehicle Restraints

Over the road trailer

Liftgate trailers

Intermodal container chassis

Consider how you secure the wide variety of trucks/trailers on the road

- Some trailers don't have ICC bars or RIGs

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Solution: Wheel Based Vehicle Restraints

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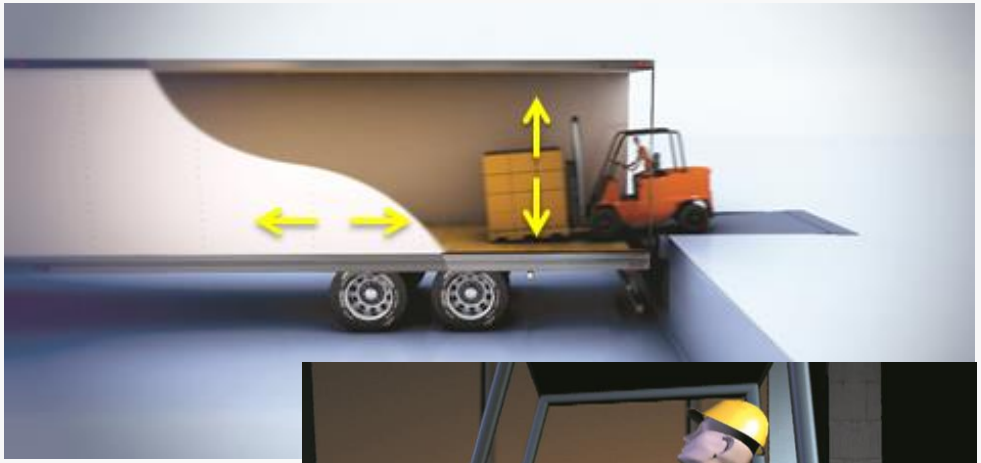
Problem: Trailer Drop

Unstabilized trailers can drop up to 8” with the weight of a forklift.



Trailer drop problems:

- Back and neck injuries
  - Today, 21% of forklift drivers suffer from back or neck problems (Bureau of Labor Statistics)
- Product and equipment damage
- Trailer separation accidents

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Solution: Stabilizing Vehicle Restraint

- Hydraulic cylinders stabilize air-ride suspension trailers to help address horizontal and vertical movement during loading and unloading.
- Smooth transition design minimizes jolts to forklift operators reducing the occurrence of back related injuries.
- Minimizes product damage and wear and tear on other dock equipment components.

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Solution: Automatic Vehicle Restraints

OSHA Instruction STD 1-11.7

August 5, 1981

Office of Compliance Programming

Subject: 29 CFR 1910.178(k)(1) and (m)(7): Mechanical Means to Secure Trucks or Trailers to a Loading Dock – Special Addendum

A. Purpose. This instruction allows the use of a mechanical means which secures trucks or trailers to a loading dock in situations in which they provide the equivalent protection of wheel chocks.

1. A positive mechanical means to secure trucks or trailers to a loading dock is allowed provided the system is installed and used in a manner that effectively prevents movement of trucks and trailers during loading, unloading and boarding by hand trucks and powered industrial trucks.
2. All of the mechanical equipment shall be installed, maintained and used as recommended by the manufacturer.
3. Any damaged mechanical equipment will be removed from service immediately.

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Solution: Choose the Right Vehicle Restraint

VEHICLE RESTRAINT	STABILIZATION	TRAILER SEPARATION ACCIDENTS				MAJOR TRAILER TYPES		
	Trailer Stabilization	Early Departure	Trailer Creep	Landing Gear Collapse	Trailer Pop-Up	Trailer Upending	Intermodal Chassis	Over-the-Road Trailers	Lift Gate Trailers
 STABILIZING	X	X	X	X	X	X	X	X	N/A
 SHADOW HOOK	N/A	X	X	X	X	X	X	X	N/A
 VERTICAL	N/A	X	X	TRAILER STAND	N/A	TRAILER STAND	X	X	N/A
 WHEEL BASED	N/A	X	X	TRAILER STAND	N/A	TRAILER STAND	X	X	X

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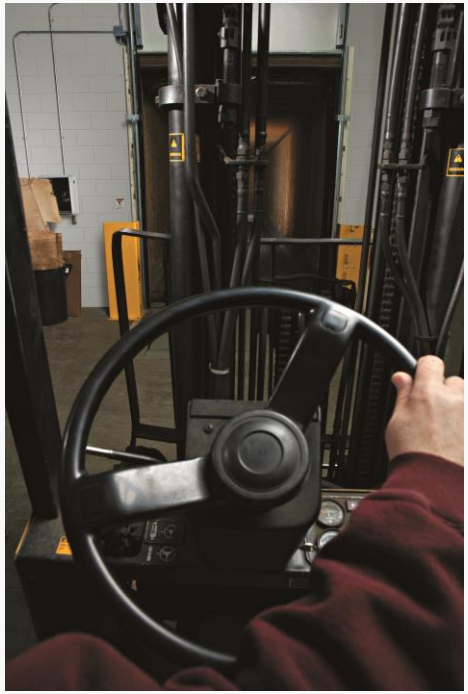
Problem: No Visual Cues for Pedestrian Safety

In many cases it is easy for control boxes and lighting systems to be blocked by:

- –Loads
- –Fork Trucks
- –People
- –Other Physical Obstruction

Or workers on the drive approach are unaware of incoming trailers



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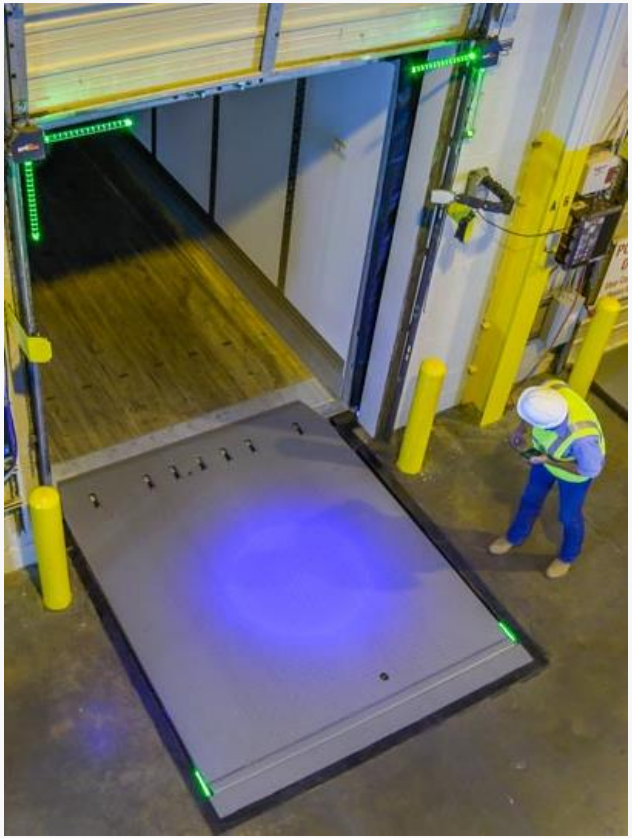
Solution: Visual Hazard Recognition

Protect your people and processes with:

- Pedestrian-forklift collision protection inside at the dock
- Visual and audible communication in the drive approach
- Trailer presence notification



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Problem: Landing Gears Fail

Landing Gear Collapse

Some lighter duty trailer stand units may require two per trailer for greater stability

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Problem: Landing Gears Fail

OSHA® Occupational Safety and Health Administration

OSHA guide 1910.178 (k)(3)

Fixed jacks may be necessary to support a semi-trailer and prevent upending during the loading or unloading when the trailer is not coupled to a tractor.

Solution: Trailer Stands for Added Measure of Safety

Look for :

- ERGONOMIC HANDLES
- 16" Solid Rubber Tires
- 30” X 16” Top Plate
- 16” X 30” Base Plate
- 100,000 lb. Static Load Capacity

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Problem: Falls From Platforms & Vacant Docks

OSHA Updated Rule: January 17, 2017

OSHA® Occupational Safety and Health Administration

OSHA guide 1910.28(b)(1) Unprotected sides and edges

- (i) Except as provided elsewhere in this section, the employer must ensure that each employee on a walking-working surface with an unprotected side or edge that is 4 feet (1.2m) or more above a lower level is protected from falling by one or more of the following:
- (b)(1)(i)(A) Guardrail systems
- (b)(1)(i)(B) Safety net systems; or
- (b)(1)(i)(C) Personal fall protection systems, such as personal fall arrest , travel restraint, or positioning systems

1910.28(b)(7)

- *Openings*. The employer must ensure that each employee on a walking-working surface near an opening, including one with a chute attached, where the inside bottom edge of the opening is less than 39 inches (99cm) above that walking-working surface and the outside bottom edge of the opening is 4 feet (1.2m) or more above a lower level is protected from falling by the use of:

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Problem: Falls From Platforms & Vacant Docks

How do we address the challenge of the open dock door?

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Solution: Roll Off Protection

7" HIGH BARRIER

5" HIGH BARRIER

- Automatic roll off protection at the edge of the dock
- Look for: unobstructed “end loading” capability!

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Solution: Barrier Protection

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Problem: Dock Shock

Rumble strip effect

Today, 21% of forklift drivers suffer from back or neck problems.

-Bureau of Labor Statistics

Rear hinge can create bumps and gaps that cause jolts to forklift operators, jostle product and damage loading dock equipment.

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Problem: Dock Shock

Speedbump effect

Front hinge creates bumps that cause jolts to forklift operators, decrease productivity, jostle products, and damage loading dock equipment

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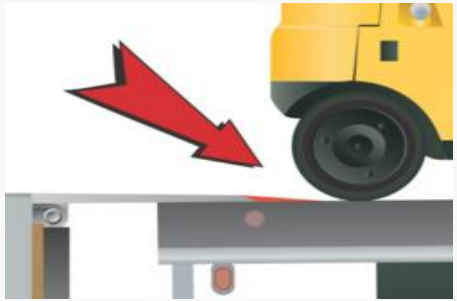
Solution: Smooth Transition Dock Levelers

- New front and rear hinge design provides *smoothest transition* from the warehouse floor to the trailer bed
- Reduces Whole-Body Vibration up to 76% percent



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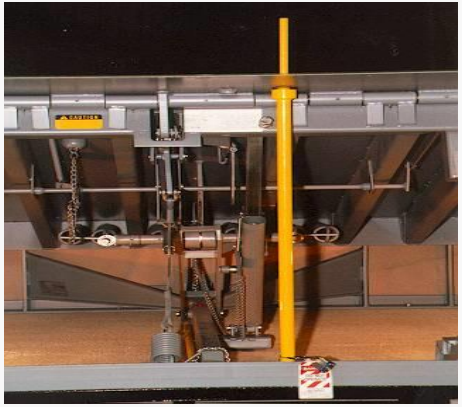
Problem: Dock Leveler Maintenance



Make certain dock leveling equipment is braced & secured

- Does your company have a written Lock Out Procedure for dock equipment?
- Ensure your personnel's safety with the Safe-T-Strut! Helps comply with OHSA 1910.147

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Problem: Hot Trailer Marker Lights Can Cause Fires

1999 NHTSA enforcement of trailer marker lights requirement

Compressed into foam seal, lights can reach 900 degrees F in as little as 20–30 minutes.

"It took three fire extinguishers to put it out! We're lucky the whole building didn't catch fire."

- Shipping Manager, CWC Textron

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Solution: Fire Fighter Technology

- Available on Rite-Hite Head Pads, Head Curtains and Side Pads
- Multi-layer foil, heat dissipation system
- Can prevent burning from trailer marker lights

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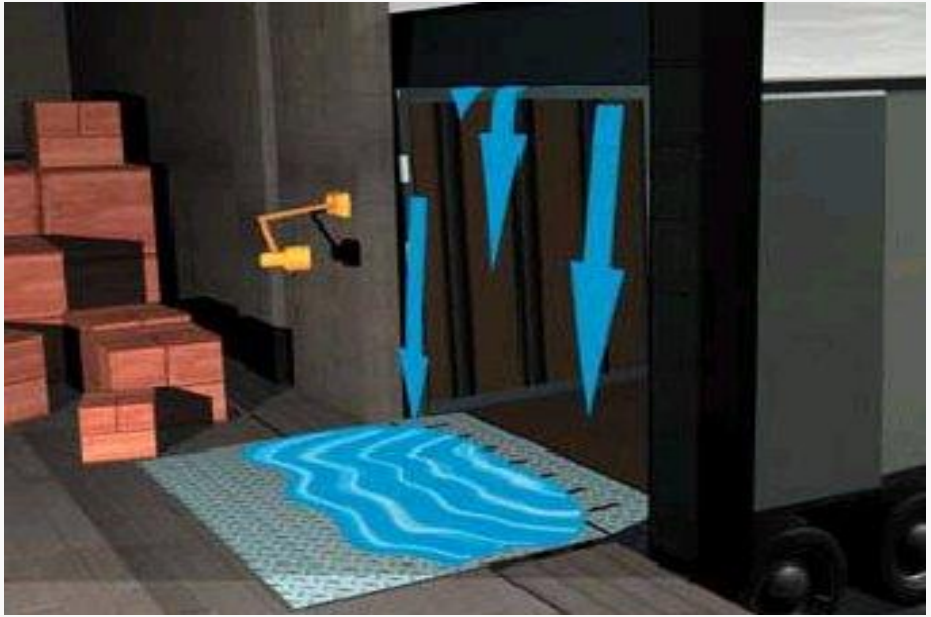
Problem: Is Water Creating Safety Concerns at Your Dock?



- Water damage to products
- Wet, slippery, icy dock levelers

Even with a good dock seal, water can infiltrate dock from top of trailer

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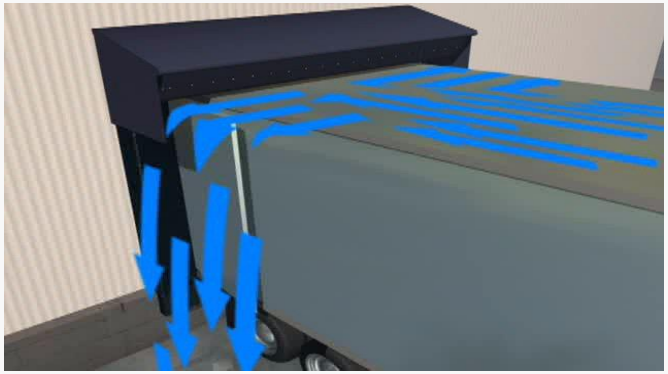
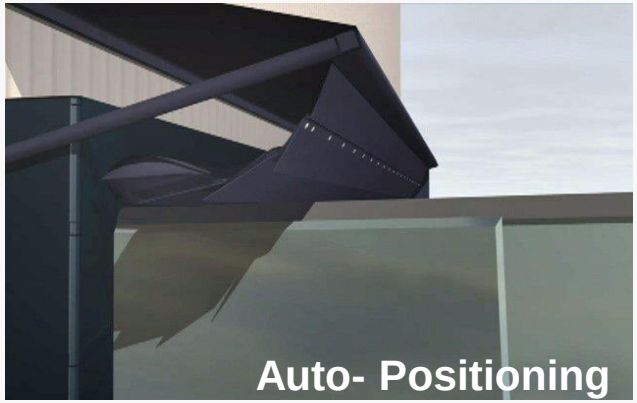
Solution: RainGuard Header Seal





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Problem: Area Protection and Pedestrian Safety

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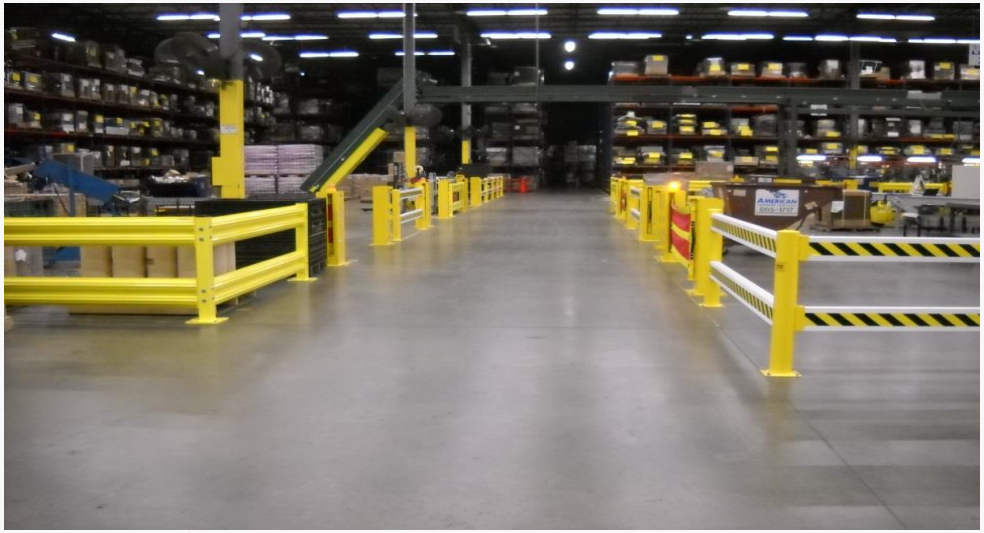
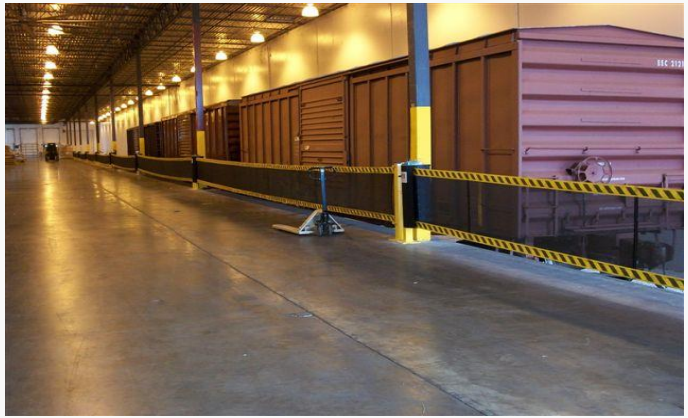
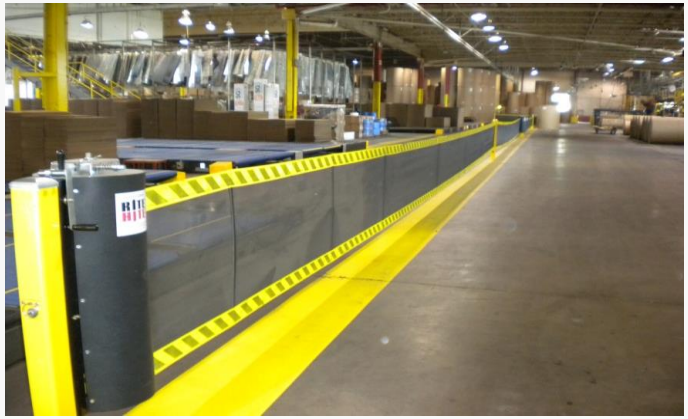
Solution: Barrier Systems Protective Railing

Separates & Defines

- Interior loading docks
- Long walkways
- Large areas







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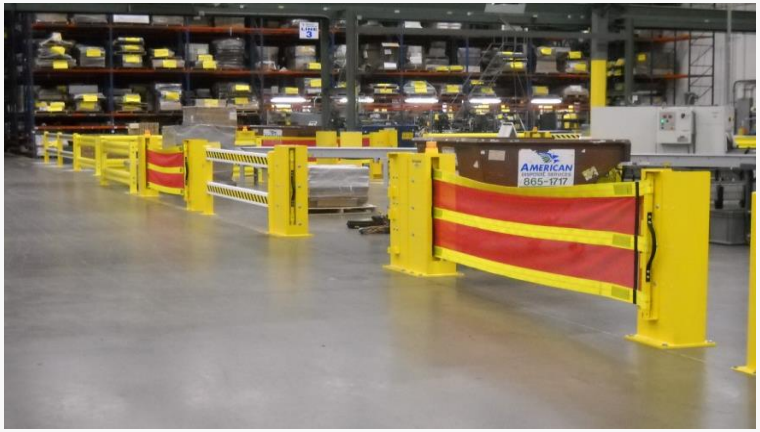
Solution: Barrier Systems Protective Railing

Modular Design

- Rails can be removable
- Easy to measure, layout and install



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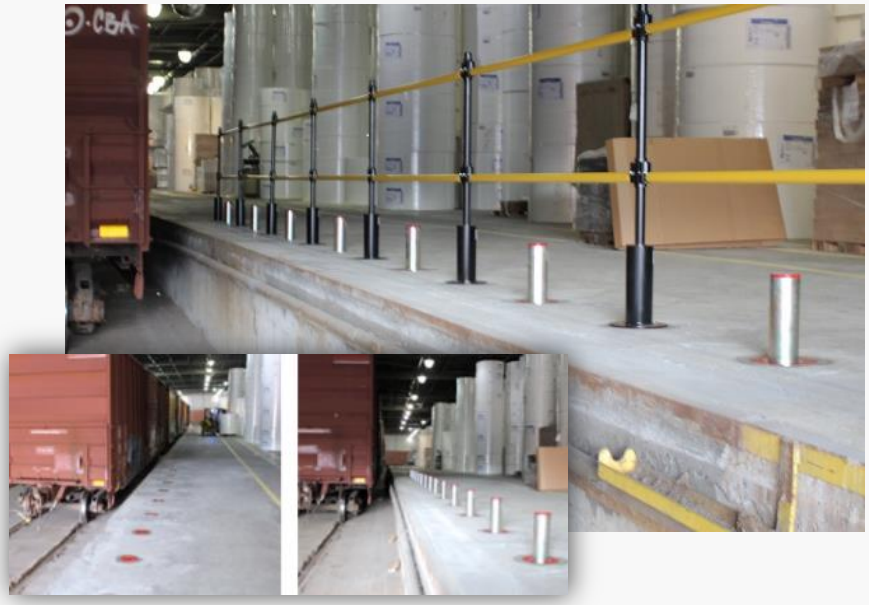
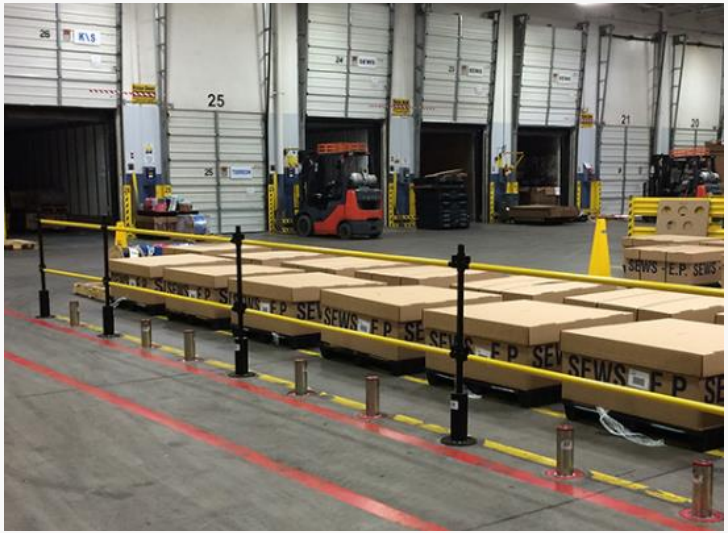
Solution: Barrier Systems Protective Railing

Unobstructed Access

- Heavy duty safety
- Access when needed





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Problem: Intersection Safety

- Hurried traffic moves throughout a facility daily creating dangerous situations
- Warning signs and mirrors may not be enough

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Solution: Traffic Detection

- Unidirectional microwave sensors differentiate approaching traffic
- Detect for four-way, three-way and two-way intersections
- Adjustable sensing range and sensitivity
- Communicates using yellow LED yield sign and red LED stop sign
- When two or more red LED stop signs appear, a blue LED light is also projected onto the floor

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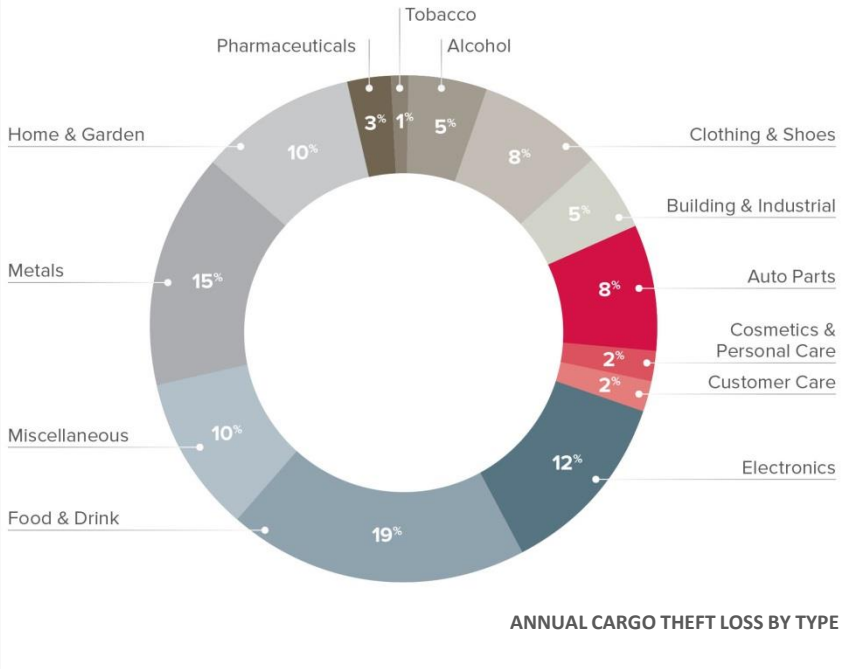
Problem: You Are Being Targeted



An estimated $35 billion in cargo is stolen from the U.S. every year.

Prime targets are unsecured and unattended trailers, often found in the M.T.Z.

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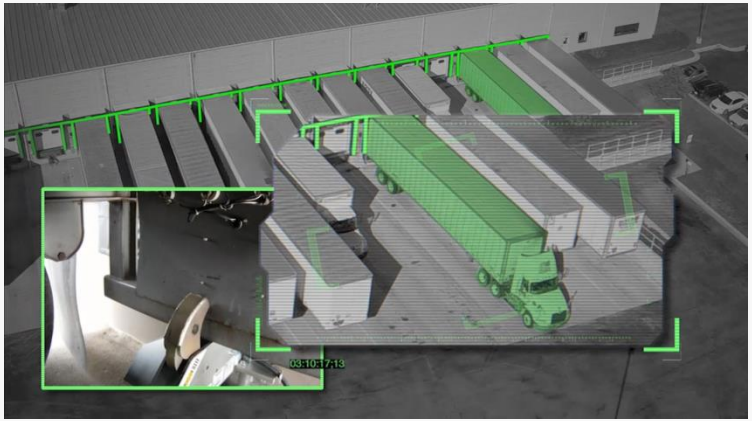
Solution: Defend & Secure Your Supply Chain



Dok-Lok® vehicle restraints can physically enhance security at a facility when linked with an active building security system. If an engaged restraint is tampered with, the building security system is notified and facility protocol is followed.

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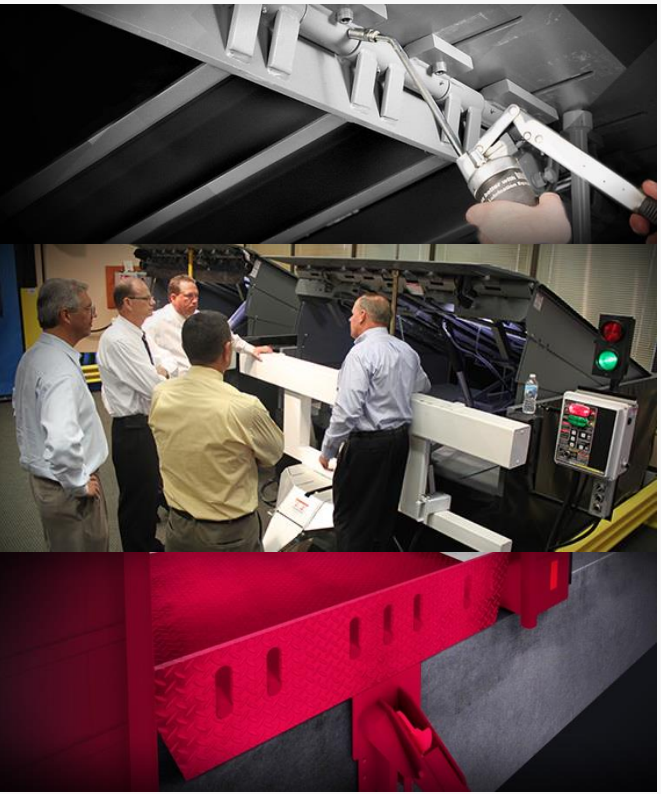
We Can Help Make Your Dock Safe



- Loading Dock Safety Assessments
- Loading Dock Safety Presentations
- On-Site Training and Support
- Fly-In Program

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Contact Us

- 20 plus years of Material Handling Industry experience. Available to speak to Plants, Distribution Centers, Trade Associations or Conventions on any of the topics listed above.

- Experience working as a liaison between Rite-Hite, our representative enterprise and World Wide customer base of Fortune 1000 Companies.

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