



**RITE·HITE®**  
*ALWAYS LOOKING AHEAD*

**LOADING DOCK SAFETY:**  
Prevent Accidents, Increase Productivity

# Who is Rite-Hite?

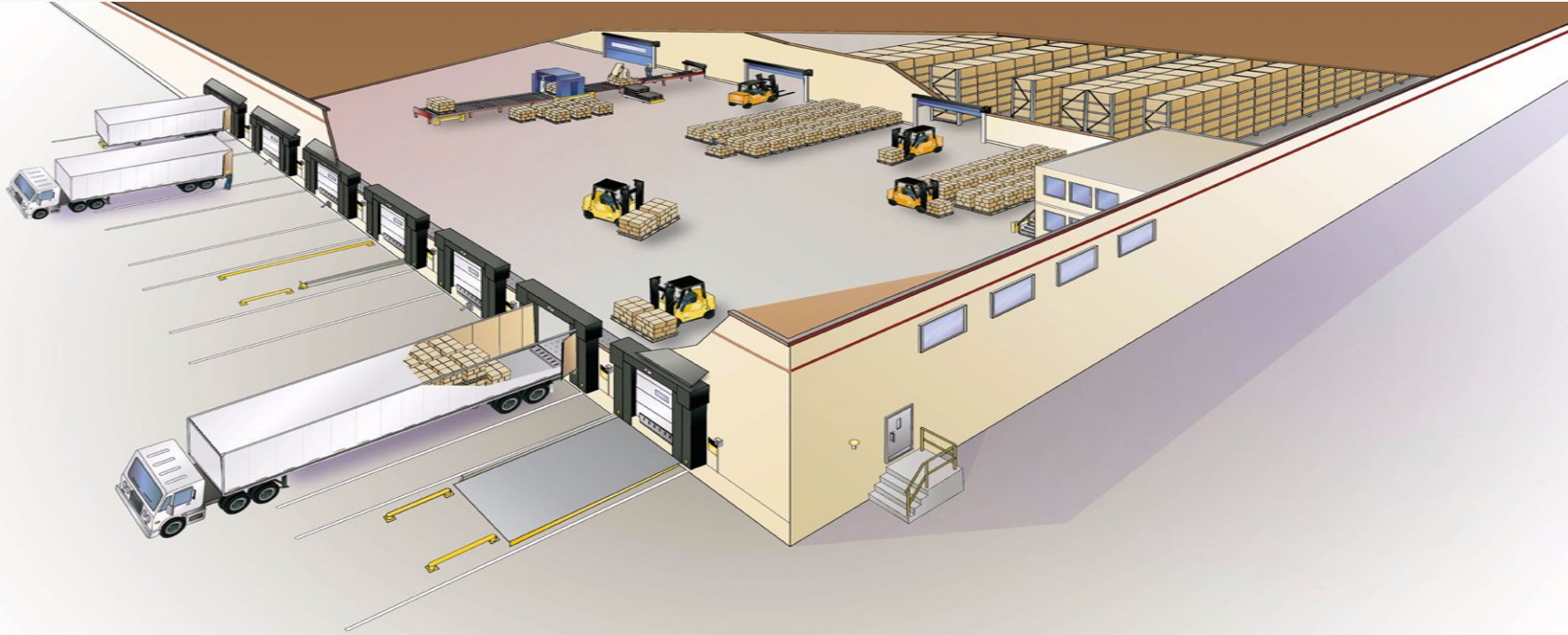
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- A world leader in the manufacture, sale, and service of loading dock equipment, industrial doors, safety barriers, HVLS fans, industrial curtain walls, and more – all designed to improve safety, security, productivity, energy savings, and environmental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

# Safety in the BIG PICTURE



# Defining the Material Transfer Zone



# 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



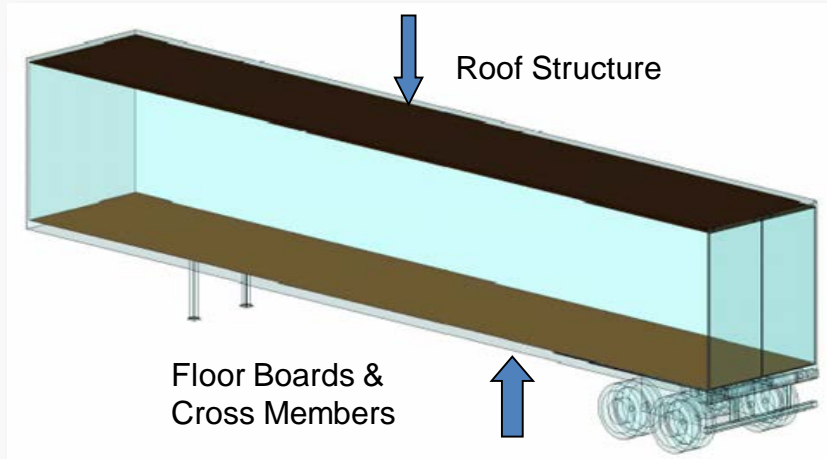
# High % of accidents take place at the Material Transfer Zone

- 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% of all reported accidents could have been avoided with proper safety precautions

\*nist.gov, "Performance Metrics for Intelligence Systems Workshop" 2009

# TRAILER HAZARD: Identify Damage During Inspections

Follow guidelines for both exterior and interior inspections of trailer body!



# TRAILER HAZARD: Identify Damage During Inspections

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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

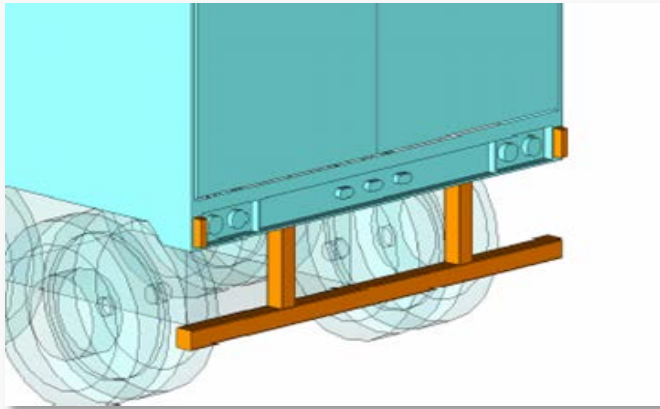




# TRAILER HAZARD: Identify Damage During Inspections

Rear impact guards

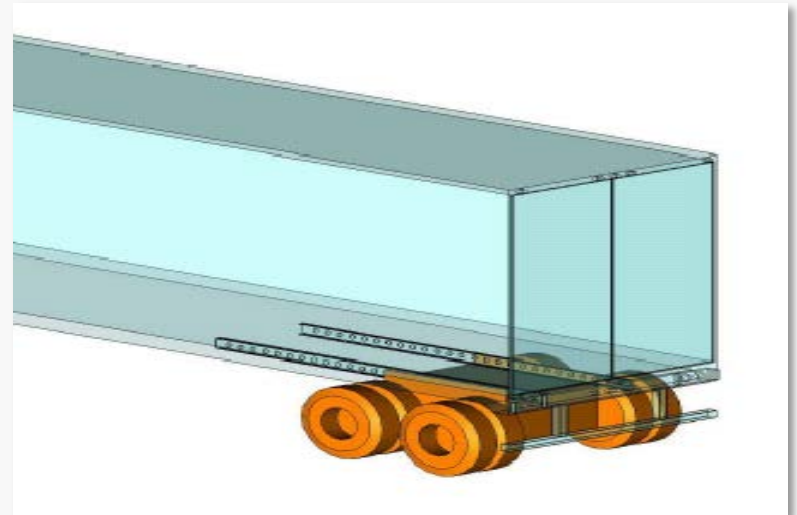
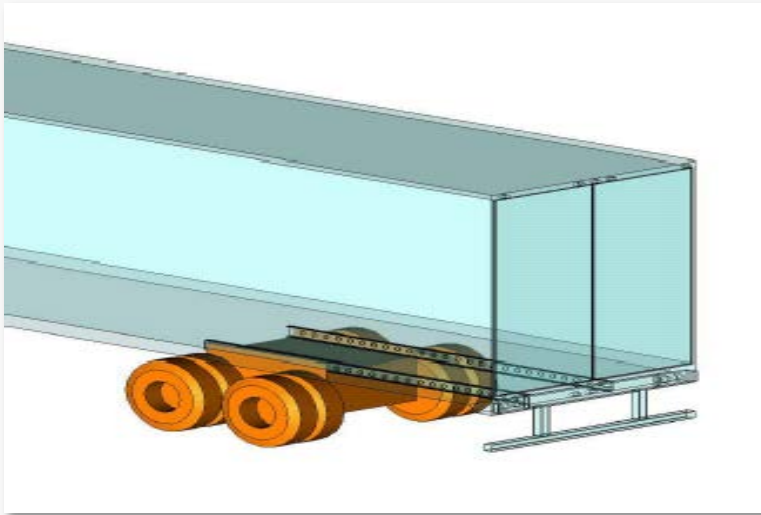
Visually inspect structural integrity



# TRAILER HAZARD: Identify Damage During Inspections

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



Preferred location of Tandem Wheels

# 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



# TRAILER HAZARD: Identify Damage During Inspections

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## 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!



# PROBLEM: Catastrophic Trailer Separation Accidents

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## 1. Premature Departure

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





# PROBLEM: Catastrophic Trailer Separation Accidents

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## 2. 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.



# PROBLEM: Catastrophic Trailer Separation Accidents

## 3. Landing Gear Collapse

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



# 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

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## 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.



## 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





# PROBLEM: Automatic Vehicle Restraints

Vehicle Restraints help prevent all types of trailer separation accidents

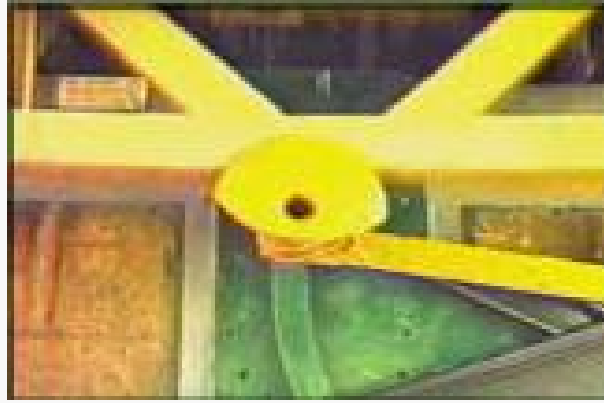


# PROBLEM: Automatic Vehicle Restraints

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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!



# PROBLEM: Some Trailers Don't Have ICC Bars or RIGs

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Slide rail liftgate trailer



Tuck under liftgate trailer



# SOLUTION: Wheel Based Vehicle Restraints



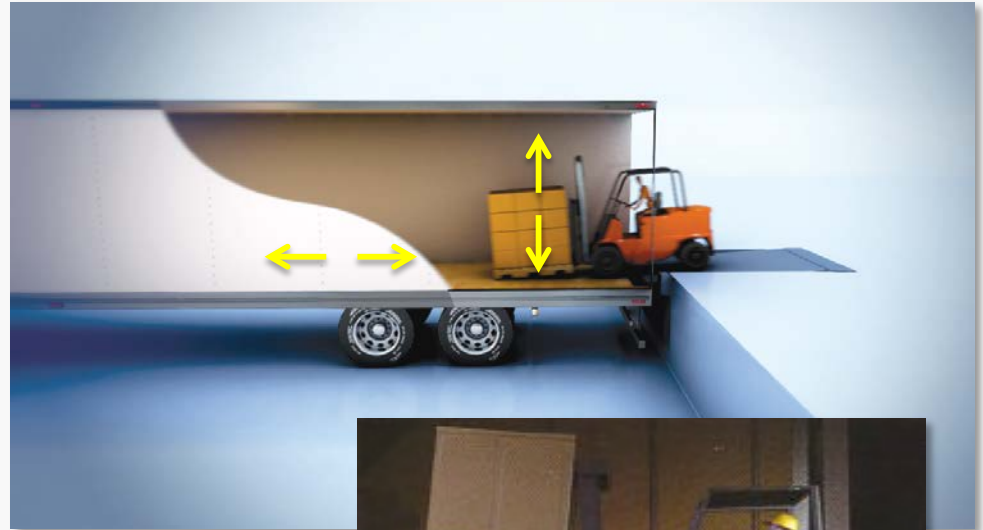
# PROBLEM: Trailer Drop

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

Trailer drop problems:

- Back and neck injuries
- Product and equipment damage
- Trailer separation accidents





# 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.



# SOLUTION: Automatic Vehicle Restraint



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.

# PROBLEM: No Visual Cue for Forklift Operator

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

- Loads
- Fork Trucks
- People
- Other Physical Obstruction



## SOLUTION:

# Visual Communication – The First Step to Safety



- Corner-Vu and Leveler-Vu confirm Dok-Lok® engagement status to forklift drivers as they enter and exit the trailer.
- Full-time communication in the M.T.Z. helps keep personnel safe and increases productivity.

# PROBLEM: Landing Gears Fail

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Landing Gear Collapse



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



# PROBLEM: Landing Gears Fail

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## **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

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Look for :

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



# PROBLEM: Falls From Dock Platforms & Vacant Loading Docks

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## OSHA guide 1910.23 Guarding floor and wall openings and holes

- (a) Protection for floor openings. (1) Every stairway floor opening shall be guarded by a standard railing...
- (10)(b) Protection for wall openings and holes.
  - (1) Every wall opening from which there is a drop of more than 4' shall be guarded by one of the following
    - (i) Rail, roller, picket fence, half door, or equivalent barrier...

# **PROBLEM:** Falls From Dock Platforms & Vacant Loading Docks

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





# SOLUTION: Safe-T-Lip Levelers



7" HIGH BARRIER



5" HIGH BARRIER

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

# SOLUTION: Safe-T-Gate Barrier Protection

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# PROBLEM: DOCK SHOCK!



Rumble strip effect



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



# PROBLEM: DOCK SHOCK!



Speedbump effect

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



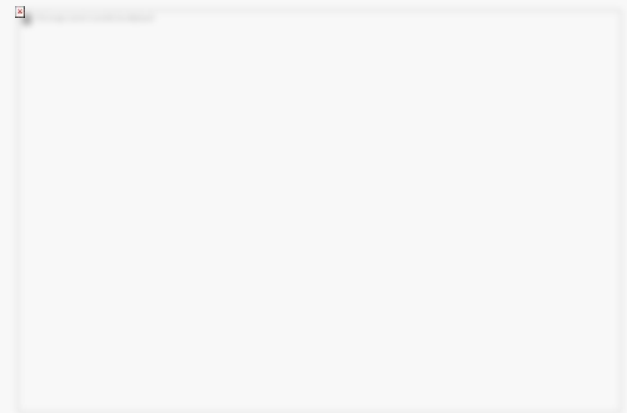
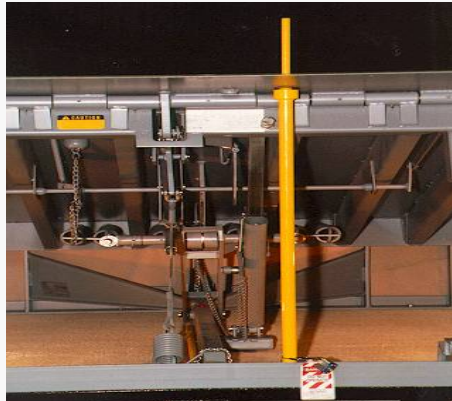
# SOLUTION: Smooth Transition Dock Levelers

- 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



# BEST PRACTICES: Dock Leveler Maintenance

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**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 OSHA 1910.147

# 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

## SOLUTION: FireFighter 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



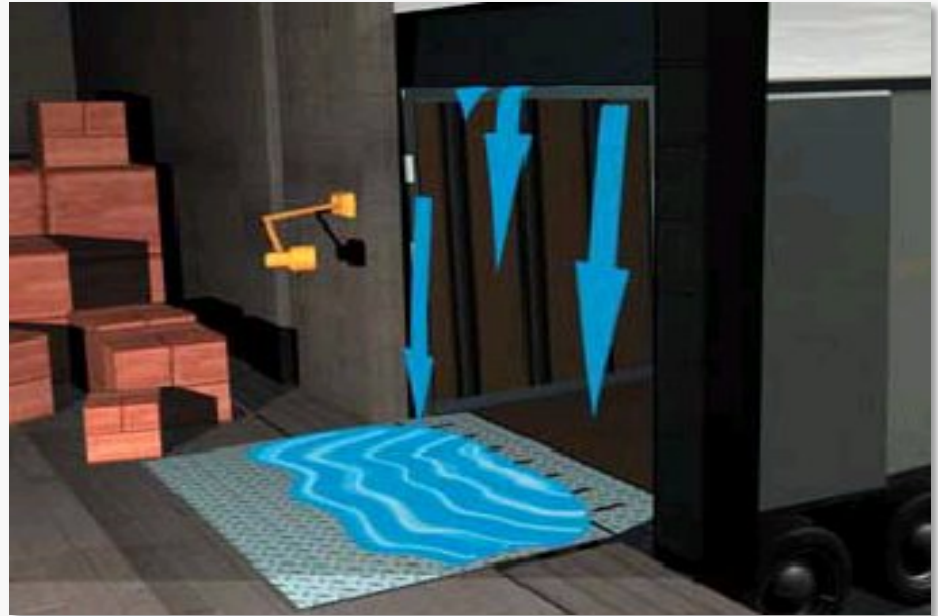


## PROBLEM:

# Is Water Creating Safety Concerns at Your Loading Dock?

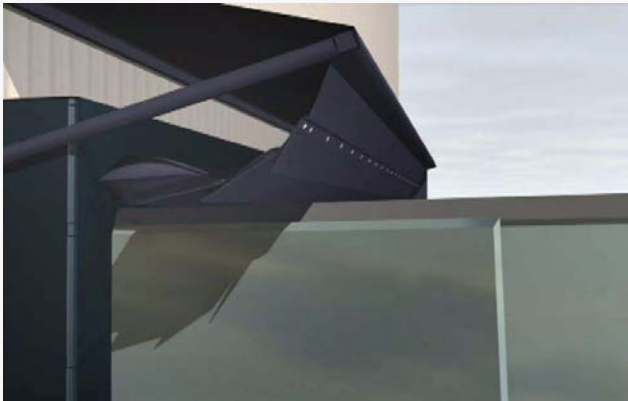
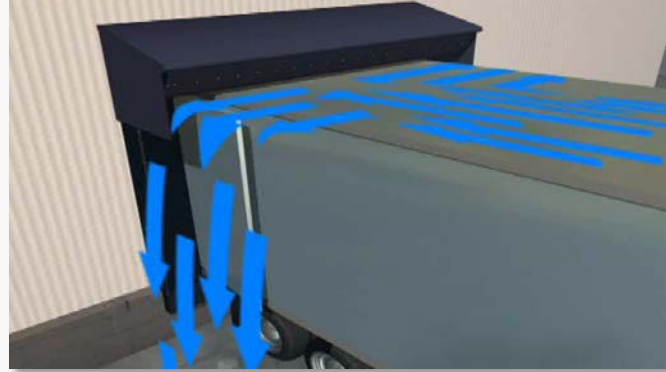


- Water damage to products
- Wet, slippery, icy dock levelers



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

# SOLUTION: RainGuard Header Seal



# PROBLEM: Area Protection and Pedestrian Safety

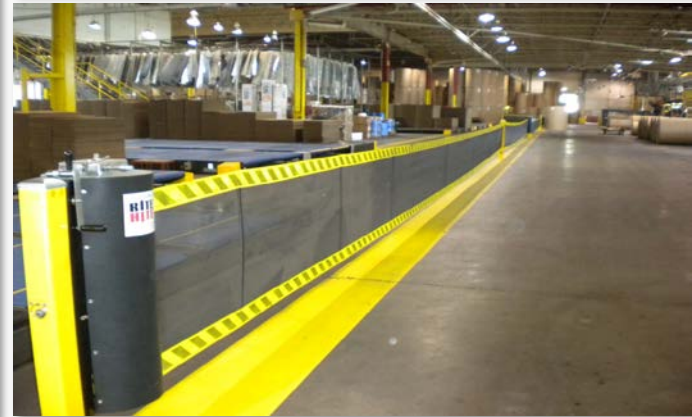
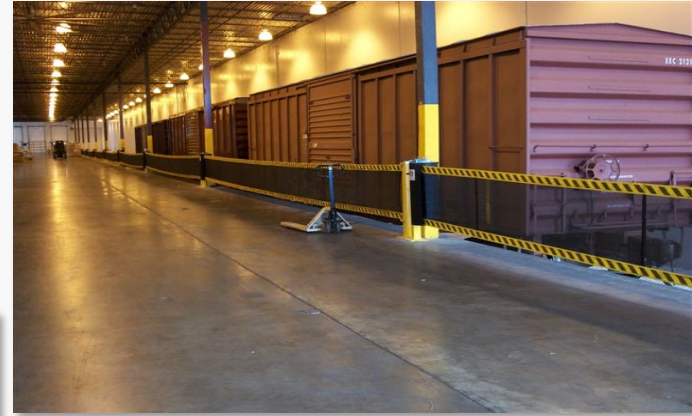
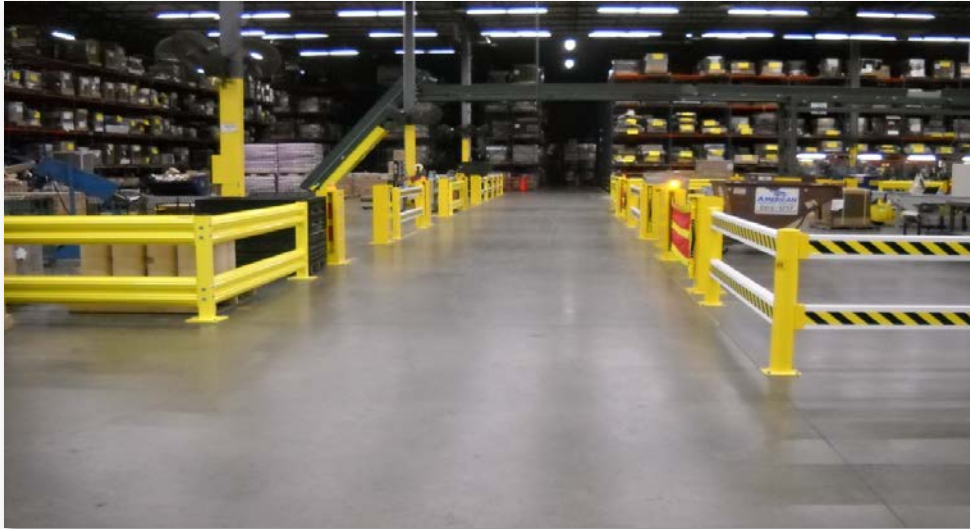
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# SOLUTION: Barrier Systems Protective Railing

Separates & Defines

- Interior loading docks
- Long walkways
- Large areas





# SOLUTION: Barrier Systems Protective Railing

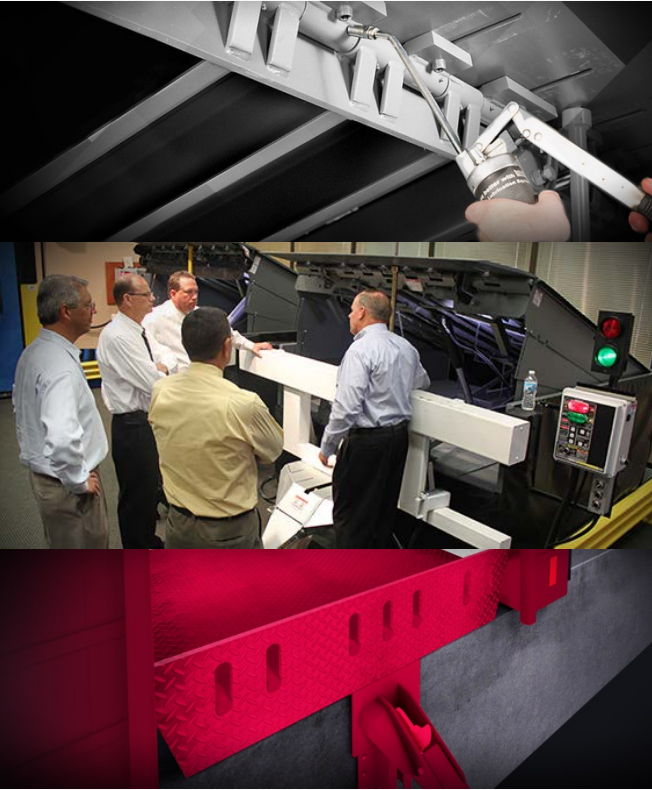
## Modular Design

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





# We Can Help Make Your Dock Safe



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

# Thanks to...

- Supporting materials for this seminar were provided by the following groups:
  - Pulp & Paper Safety Association
  - Automotive Industry Action Group (refer to M-6)



Automotive Industry Action Group



**BRINGING THE INDUSTRY HOME SAFE**

[www.ppsa.org/orderform.htm](http://www.ppsa.org/orderform.htm)

# Contact Us

- 30 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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**Walt Swietlik**

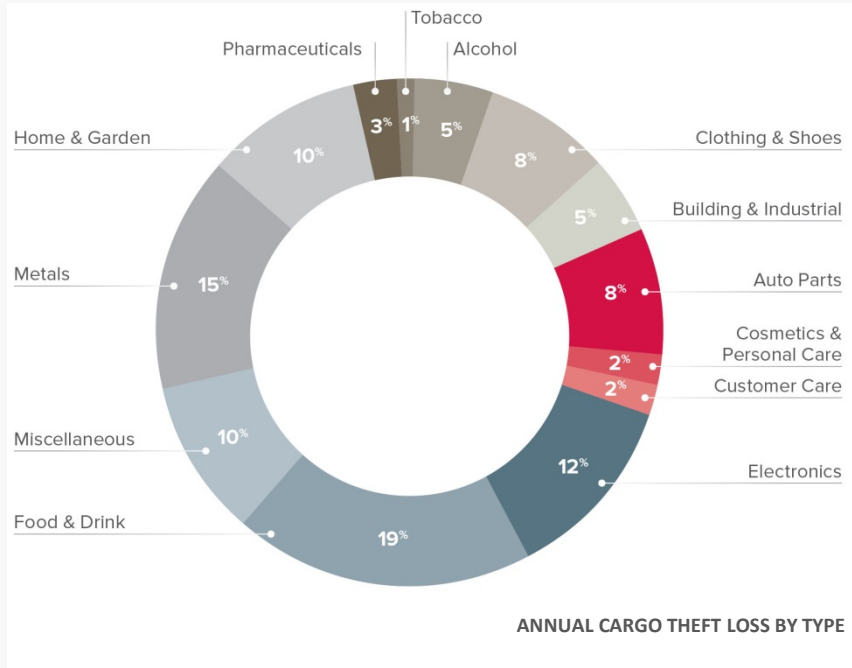
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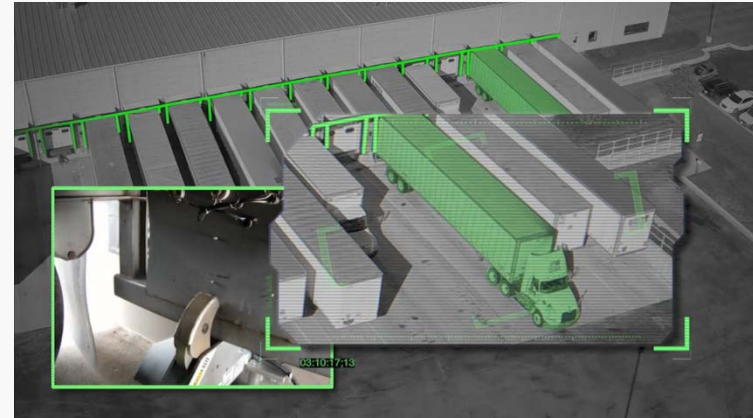
# PROBLEM: You Are Being Targeted



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.



# 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.