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
Safety in the BIG PICTURE
Defining the Material Transfer Zone
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% of all reported accidents could have been avoided with proper safety precautions

*nist.gov, "Performance Metrics for Intelligence Systems Workshop" 2009
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.
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
Trailer Hazard: Identify Damage During Inspections

Rear impact guards – visually inspect structural integrity

Inspect when using vehicle restraint devices to secure the trailer to the dock!
Trailer Hazard: Identify Damage During Inspections

- 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

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

Premature Departure

• A truck driver mistakenly drives away while a lift truck is entering, leaving, or inside the trailer.
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.
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.
(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
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: 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
Solution: Wheel Based Vehicle Restraints
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
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.
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.
## Solution: Choose the Right Vehicle Restraint

<table>
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<tr>
<th>VEHICLE RESTRAINT</th>
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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
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
Problem: Landing Gears Fail

Some lighter duty trailer stand units may require two per trailer for greater stability.
Problem: Landing Gears Fail

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
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:
Problem: Falls From Platforms & Vacant Docks

How do we address the challenge of the open dock door?
Solution: Roll Off Protection

- Automatic roll off protection at the edge of the dock
- Look for: unobstructed “end loading” capability!
Solution: Barrier Protection
Problem: Dock Shock

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

Today, 21% of forklift drivers suffer from back or neck problems. -Bureau of Labor Statistics
Problem: Dock Shock

Front hinge creates bumps that cause jolts to forklift operators, decrease productivity, 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
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
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: 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
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
Solution: RainGuard Header Seal

Auto-Positioning

Tight seal across top of trailer
Problem: Area Protection and Pedestrian Safety
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
Unobstructed Access
• Heavy duty safety
• Access when needed
Problem: Intersection Safety

- Hurried traffic moves throughout a facility daily creating dangerous situations

- Warning signs and mirrors may not be enough
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
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.
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.
We Can Help Make Your Dock Safe

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

Matt Fleckenstein  
Vice President of Sales  
Cold storage Industry Specialist  
RITE HITE Corporation  
8900 N. Arbon Drive  
Milwaukee, WI 53223 USA

www.ritehite.com  
Mfleckenstein@ritehite.com  
Office:  630-379-1752  
Toll Free:  800-456-0600