

Trailer Yard and Loading Dock Hazards

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Disclaimer

- This information has been developed by an OSHA Compliance Assistance Specialist and is intended to assist employers, workers, and others as they strive to improve workplace health and safety. While we attempt to thoroughly address specific topics **[or hazards]**, it is not possible to include discussion of everything necessary to ensure a healthy and safe working environment in a presentation of this nature. Thus, this information must be understood as a tool for addressing workplace hazards, rather than an exhaustive statement of an employer's legal obligations, which are defined by statute, regulations, and standards. Likewise, to the extent that this information references practices or procedures that may enhance health or safety, but which are not required by a statute, regulation, or standard, it cannot, and does not, create additional legal obligations. Finally, over time, OSHA may modify rules and interpretations in light of new technology, information, or circumstances; to keep apprised of such developments, or to review information on a wide range of occupational safety and health topics, you can visit OSHA's website at www.osha.gov.

Disclaimer

This presentation focuses on hazard identification and recommended abatement to ensure employee safety

Vehicle operations can have multiple jurisdictional authorities such as but not limited to Department of Transportation regulations both federal and state, Federal Motor Carrier Safety Administration etc.

It is the employer's responsibility to ensure that they follow ALL regulations as it relates to employee and public safety while operating motor vehicles to include but not limited to motor carrier vehicles and trailers, earth moving equipment, material handling equipment (forklifts) and weight handling equipment (cranes)

Scope

- This presentation does not comprehensively cover each topic as that would require a time frame greater than the time allotted, it is developed instead to highlight the general requirements, items to address and sources of customized help for employers that are looking to improve workplace safety and health.
- During the course of, this class the word SHALL may appear, this indicates a regulatory requirement
- Employers can find the information used as reference to this presentation at www.osha.gov

Scope

- When utilizing equipment such as trailers, forklifts etc. the employer\user shall utilize manufacture information on its safe use
- Locate and read and understand user and operator manuals
- Never modify equipment without manufacturer approval
- Never use equipment for a purpose for which it was not designed

Objectives

At the completion of this training, the attendee will be able to:

- Identify common hazards associated with motor vehicle operations around employees on foot (pedestrians)
- Identify situations to avoid when working around motor vehicles
- Identify loading dock hazards and methods to minimize the risk

Common Hazards Associated with motor vehicles and Pedestrians in a work area

- Common hazards include but are not limited to:
 - Unanticipated backing (back overs)
 - Caught between hazards (hooking up trailers/ auxiliary items)
 - Struck-by hazards (interior traffic control plan)
 - Dock board failures

Common Hazards Associated with motor vehicles and Pedestrians in a work area

- **Back over hazards**
 - Fatalities in trailer yards continue to happen in our region
 - Although each incident has its own set of circumstances, they all have some commonalities
 - Operators had backed a piece of equipment with an obstructed view to the rear area
 - Pedestrian workers were allowed to work in areas where equipment and foot traffic would conflict
 - Worksite had no written or discussed internal traffic control plan
 - Employer had not discussed with employees the prohibited areas for foot traffic

Common Hazards Associated with motor vehicles and Pedestrians in a work area

- **Trailer Yard Operations**
 - **Employees SHOULD NEVER** be allowed to walk through or between trailers that are being connected or disconnected
 - If a yard assistant is needed to help disconnect a trailer, the Tractor **SHOULD** be placed in neutral with the parking\service brake **FULLY** engaged
 - Employees assisting with backing vehicles **MUST** remember to stand in a position where they can see the side view mirrors and the operator's face must be visible in that mirror, if you **CAN'T** see the driver in the mirror, they **CAN'T** see **YOU**
 - Never hook a trailer up with the primary mover (Tractor, Truck etc.) while it is still in reverse gear

Landing gear\Trailer prop

- Trailer Yard Operations
- Landing gear- the prime mover (tractor etc.) should not be in either reverse or forward
 - The landing gear should be inspected regularly to ensure it is functioning in accordance with design
 - Employees should never place any part of the body under the trailer when the tractor is pulling away to disconnect
 - Landing gear can fail and cause a struck by hazard
 - When utilizing the crank, avoid placing body parts under the trailer

Landing gear\Trailer prop



Always keep body parts outside the confines of trailer when setting landing gear

Landing gear\Trailer prop



Failed landing gear, struck by hazard

Landing gear\Trailer prop

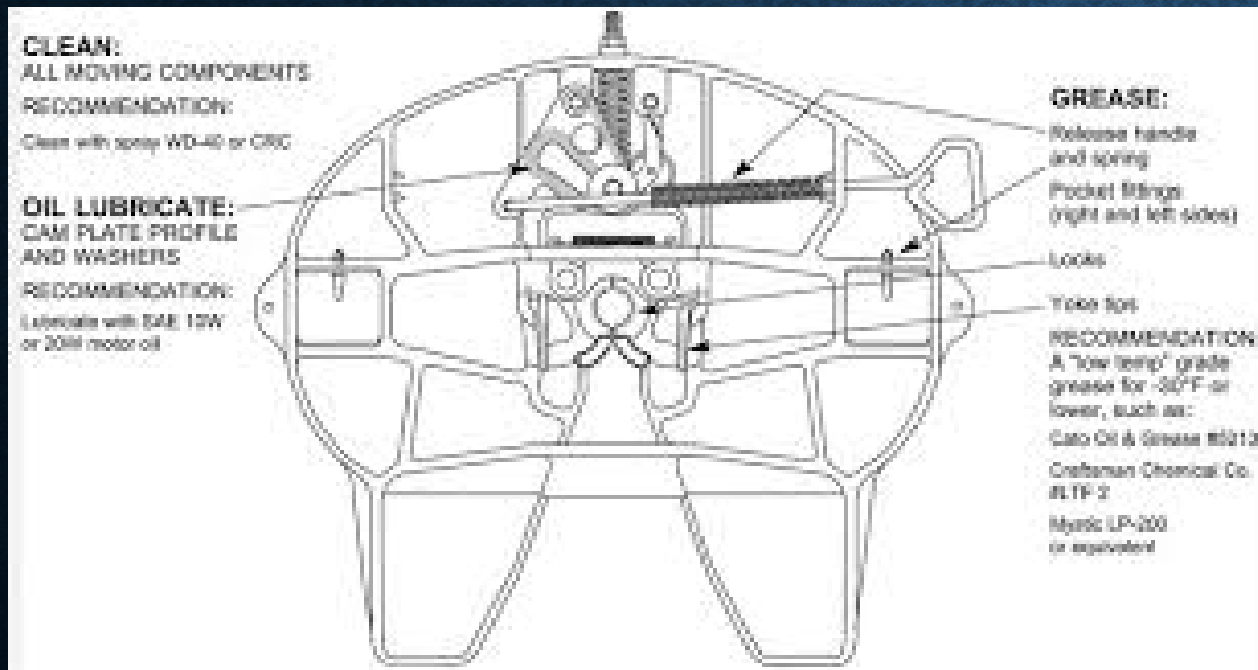


Bent landing Gear



Trailer safety jack

Fifth Wheel



Fifth wheel



Fifth wheel release safety
hook

Fifth Wheel

Routine maintenance of the fifth wheel ensures that the mechanism performs as designed

A broken or stuck fifth wheel can lead to hazards such as but not limited to

Unanticipated trailer movement\dislodgement- Stuck by hazards

Damage to trailer king pin and support framing- Caught in between hazards

The manufacturer will provide inspection and maintenance intervals as well as preventative and corrective actions in the owners and operators manual

Fifth Wheel

Most companies state that the fifth wheel should be lubricated every 6000 miles or monthly, whichever comes first

This is only a guide, this assumption is that the component is not subjected to heavy dust environments, or excessive use (such as with a yard tractor)

As part of the daily pre-trip check list, the components shall be inspected (DOT requirement)

- The inspection is both visual and physical

- You are looking to see that parts move and function as designed

- There isn't damage or corrosion present

Connecting\Disconnecting

- Trailer Yard Operations
- When connecting trailers, tandems etc. Wait for the tractor to complete backing and driver signals they are done maneuvering before attempting to disengage fifth wheel (use a safety hook if possible to avoid placing body under trailer or near moving parts)
- When removing air lines (gladhands) remember that these lines can be under pressure, do not put face near the lines when disconnecting
- Check lines for missing or damaged rubber rings, replace if found

Connecting\Disconnecting



Connecting\Disconnecting



Tandem Dolly: Inspections should include complete examination of the lights and air brake lines, safety chains including the hook safety latches (if equipped)

Connecting \ Disconnecting



Lot ground conditions

- Trailer Yard Operations cont:
 - Frequent inspections of the yard is required
 - Damage such as potholes, blocked drains and damaged exterior lighting should be immediately reported and corrected by the employer\owner
 - Ground conditions must be capable of supporting anticipated loads, meaning trailers should not be parked on areas where landing gear is not fully supported, cribbing and mudsills may be required when the ground is soft of susceptible to sudden change

Lot ground conditions

Ground conditions

Grass and gravel lots require more frequent ground condition inspections than asphalt however, remember that asphalt can fail under concentrated loads also.

Asphalt will soften in high heat conditions

Lot ground conditions



Common Hazards Associated with motor vehicles and Pedestrians in a work area

- Trailer Yard Operations cont:
 - High visibility gear should be worn in the day light hours
 - MUST be worn in low visibility conditions including snow, heavy rain and night
 - When ambient lighting is reduced, it is recommended that employees wear personal lighting devices to assist drivers with seeing the employees on foot, other drivers on foot
 - Defective exterior lights SHOULD be repaired immediately

Common Hazards Associated with motor vehicles and Pedestrians in a work area

- **Trailer Yard Operations cont:**

- **In yards and other locations, traffic patterns should be set up to for one way traffic flow.**

Operators SHOULD be prohibited from going against traffic flow pattern. It is highly recommended this be communicated through in the cab communication system or signage at the yard entrance

With exception of backing into loading dock doors or to hook up trailers, all other backing SHOULD be prohibited and enforced

Common Hazards Associated with motor vehicles and Pedestrians in a work area



Supplemental lights and reflective gear for low light situations

Lighting

If the yard area is not adequately illuminated, the employer shall provide employees with a means to be seen by vehicular traffic and to safely navigate the walking surfaces they are required to use

As a general rule 3 candle foot for exterior areas. 1926.56

Damaged or broken lights should be replaced as soon as possible

Lighting



Photo obtained from <https://fsg.com/what-is-a-foot-candle/>

Loading and Unloading Equipment

- When a worker or piece of equipment has to enter an enclosed trailer to load or unload materials precautions SHALL be taken to ensure the trailer does not move while occupied
- If the dock is equipped with a warning light system, it SHALL be inspected routinely, and defective lights or signals SHALL be replaced immediately or taken from service*
- If a vehicle is connected to the trailer that is being loaded or unloaded, it SHALL be in park, with both parking and trailer brakes set.
- If it is a free-standing trailer, the trailer Shall be supported in a manner which prevents the unanticipated movement or collapse of the trailer.*

Trailer supports



Trailer supports\Chocks



Loading and Unloading Equipment

- Do not assume that all trailers are built and designed to support a powered industrial truck
- Ensure that dock plates are secured in manner which will prevent an unanticipated collapse or movement of the plate. Dock plates SHALL be designed to hold the intended load.
- Chock systems Shall be inspected before each use, chocks that use anti-slip teeth shall be replaced when the teeth have been worn down, are cracked or missing
- Trailer jacks Shall be installed in a manner which will prevent its slippage in the event of a collapse (kickout)
- If a dock board is equipped with a bumper lock bar, the bar Shall be functional

Dock Plates



Dock Plates Automatic \ Self Leveling



Dock signaling equipment

- Dock light systems shall be inspected regularly
- When equipped with a light system, the operator shall use the system
- Ensure that outdoor lights work and are free of snow, ice, debris etc.
- Whenever possible use verbal communication to signal driver that trailer is ready for departure or require the driver to physically sign out from the dock area

Dock signaling equipment



By Pass selection: Fully read and understand what this function is and prohibit its use by employees without management approval

Dock signaling equipment



Signage

NOTICE

ALL DRIVERS MUST:

- SHUT OFF ENGINE
- SET BRAKES
- CHOCK WHEELS

NOTICE

**DRIVERS
ARE REQUIRED
TO SIGN IN & OUT**

Signage



Loading and Unloading Equipment

- Dock board slips, cutouts etc. are confined spaces
- Inspection, service and maintenance activities Must identify this a confined space and provide direction on how to perform the activity in compliance with the confined space standard. 1910.146
- Lock Tag out devices, jacks, and cribbing Shall prevent the use of the dock board, barrier and other warnings Shall be clearly visible to traffic and employees to prevent accidental back ins or surcharge loads applied from inside the building, forklifts, materials.

Dock Board Hazards



Confined Space: Crushing\collapse hazard



Pinch point hazard

Dock Board Hazards

When performing maintenance or repair, the dock board must be locked out (chocked\supported to prevent unintended movement up or down (LOTO)

The dock board cutout with the dock board inserted is considered a permit confined space due to crushing hazard and stored hydraulic energy, if LOTO is addressed it can be reclassified to a confined space until completion of the maintenance or repair, it is then reclassified to a permit confined space when work is completed, and permit is closed out

The release chain, consider providing a tool to pull the chain up or replacing worn or undersized rings to prevent pinch points

Do not replace worn chains with chains that are smaller or shorter than OEM provided chains unless given written authority by the manufacturer to do so

Roll up door fall hazards



An unprotected side or edge created by an open and unoccupied loading bay shall be equipped with a barrier or device which meets the same specifications as standard guard rails.

In this example there must be 2 chains, a top rail and mid-rail, this would not be compliant.

Barrier must be capable of withstanding all loads, plastic chains are normally not capable of supporting 200 lbs. of lateral force, the requirement for guard rails

Struck By Hazards in Work Areas

- Back overs don't only occur in work zones or on construction sites.
- Civilian vehicles such as passenger vehicles pose the same risks.
- Earthmoving equipment and equipment with machinery mounted on the bed or the rear of the vehicle are the most likely to be involved in fatal back overs
 - This is primarily due to increased blind spots
 - Obstructed clear vision to the rear
 - Articulating motion
 - Incorrect mirror adjustment or insufficient mirror coverage

Understanding Earthmoving equipment used for industrial purposes

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Reverse Signal Alarms

- As their name suggests, Reverse Signal Alarms **MUST** be automatic and activate when the vehicle's transmission is shifted into reverse
- **SHALL** be inspected before the beginning of each shift and after a prolonged break (lunch).
- Should be mounted in a manner which maximizes sound disbursement.
- Must be kept clean and free of mud, road grime and other debris
- Do not mount devices in front of the alarm, train employees to be aware of dead spots with reverse signal alarms can exist

Reverse Signal Alarms

- When testing the reverse signal alarm, best practice is to have a second employee listen for the sound when the vehicle is shifted into reverse.
 - Assisting employee must stand in a location where operator can observe them and follow hand and verbal signals
 - While in reverse, observe if backing lights are illuminated also, if they are defective or the signal alarm is defective, vehicle SHALL be removed from service until repaired
 - Vehicles equipped with safety devices such as the ones listed above and including beacons, horns, safety belts MUST have their safety devices be fully operational or it SHALL be removed from service

Types of large yard equipment



This is a piece of earth moving equipment, 1910.178 does not apply to this piece of equipment, meaning employers must follow precautions as outlined in 1926.600

Remember these articulate meaning the blind spots are constantly changing

Types of large yard equipment



This is considered a powered industrial truck, although these don't usually articulate, they do have a setting in some models known as crab, which allows all four wheels to steer, allowing the machine to move sideways

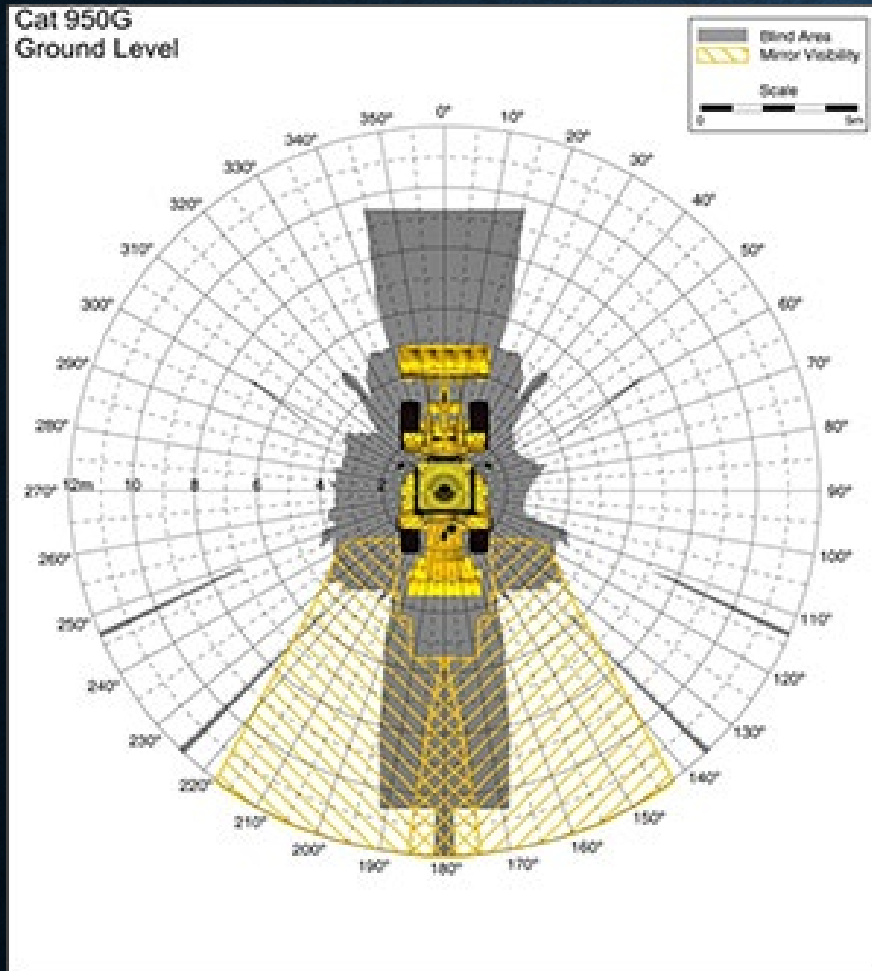
Container Handler



Container Handler\Straddle Lift



Common equipment Blind Spots



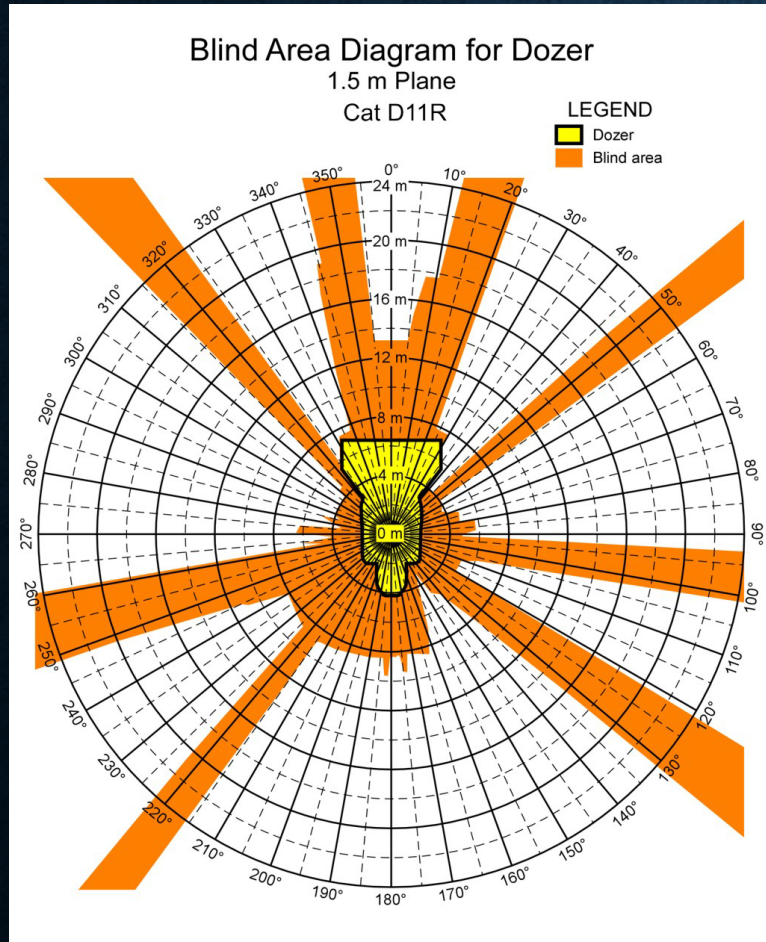
Loader

Excavator



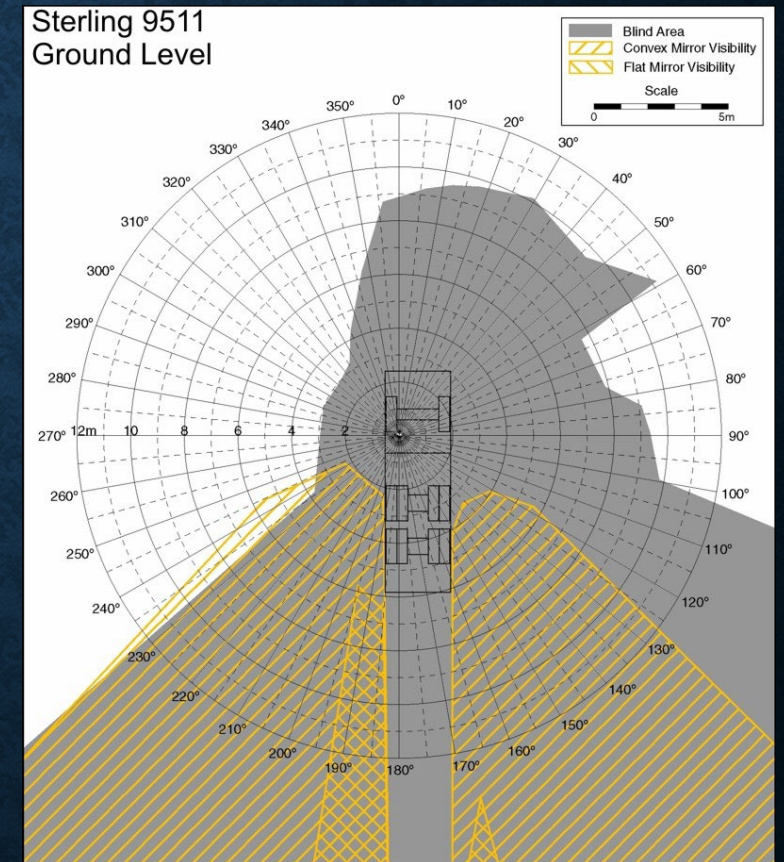
Example equipment does not constitute an endorsement of the tested machine, manufacturer or equipment by the Agency

Common equipment Blind Spots



Bulldozer

Dump
Truck\Heavy
Hauler



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Sources of Help

OSHA's On-Site Consultation Program offers no-cost and **confidential** occupational safety and health services to small- and medium-sized businesses in all 50 states, the District of Columbia, and several U.S. territories, with priority given to high-hazard worksites. **On-Site Consultation services are separate from enforcement and do not result in penalties or citations.** Consultants from state agencies or universities work with employers to identify workplace hazards, provide advice for compliance with OSHA standards, and assist in establishing and improving safety and health programs.

<https://www.osha.gov/consultation/directory-text>

Sources of Help

MASSACHUSETTS

- OSHA Consultation Program
- Massachusetts Department of Labor Standards
- 37 Shattuck Street
- Lawrence, Massachusetts 01843
- P: (508) 616-0461 (Option 2)
- F: (978) 687-0013
- Massachusetts
- Website

MAINE

- Maine Bureau of Labor Standards
- Workplace Safety & Health Division
- 45 State House Station
- Augusta, Maine 04333-0045
- (877) 723-3345 or (207) 623-7900
- (207) 623-7934
- Maine
- Website

NEW HAMPSHIRE

- WorkWISE NH
- Keene State College
- 229 Main Street, Elliot Hall M-3925
- Keene, New Hampshire 03435
- (603) 358-2411
- (603) 358-2399
- New Hampshire
- Website

Sources of Help

RHODE ISLAND

- OSHA Consultation Program, Office of Healthy Housing and Environment
- Rhode Island Department of Health
- 3 Capitol Hill, Cannon Building, Room 206
- Providence, Rhode Island 02908
- (401) 222-7747
- (401) 222-2456
- Rhode Island
- Website

VERMONT

- Project WorkSAFE
- Vermont Department of Labor
- P.O. Box 488, 5 Green Mountain Drive
- Montpelier, Vermont 05601-0488
- (888) 723-3937 or (802) 888-0620
- (802) 888-0730
- Vermont
- Website

CONNECTICUT

- Connecticut Department of Labor/CONN-OSHA
- 38 Wolcott Hill Road
- Wethersfield, Connecticut 06109
- (860) 263-6900
- (860) 263-6940
- Connecticut
- Website

QUESTIONS ?