

ERGONOMICS DEMONSTRATION PROJECT

Trucking

January 2002



Demonstration Project

Summary

Industry Type

Name: Trucking

SIC: 421

Rule Compliance Date: 7/1/01 for firms with >50 employees, 7/1/03 for the rest of firms in Sic 421

Date Completed: Ongoing

Date Started: August 2001

Participants:

External: Rick Powell

L&I: Bud Walter, and Bob Zuhlke

Original objective(s):

Ludtke Pacific Trucking volunteered to be a demonstration project as a result of an ergonomic consultation with the department on 3/20/01 when it was identified that risk factors and hazards existed related to the ergonomic rule. Ludtke Pacific Trucking does not reflect the full range of hazards that may exist in the trucking industry, as they do not manually load/ unload trucks. The objectives of the demonstration project were to:

- identify risk factors and hazards covered by the ergonomic rule in the trucking industry.
- demonstrate that trucking employers can identify risk factors and hazards covered by the rule.
- identify ways to reduce or eliminate hazards to be in compliance with the rule.
- share information from the project with the industry by allowing information to be posted on the L & I ergonomic website and/ or inclusion in industry specific workshop.
- Provide awareness education and training to shop mechanics that work in caution zone jobs.

Methods:

A combination of activities went into this project. Field teams visited the Ludtke site to evaluate jobs and work procedures. Managers and workers were interviewed to clarify work processes. Video and still images were used to review job tasks. Images were analyzed along with field notes to identify risk

factors and WMSD hazards. Equipment information was obtained from the Internet for suggested control measures.

Completed objective(s):

- A complete analysis was conducted of shop mechanics in their duties related to truck maintenance. Risk factors and a hazard were identified. Mechanics must lift brake drums that weigh up to 110 lbs. This was identified as a hazard. The team identified a brake drum dolly, which alleviates this heavy lifting.
- Analysis was also conducted on truck drivers on the method used to tarp loads. They use an automatic pulltarp system to reduce risk factors associated with tarping loads. This was identified as the result of a previous modification.
- The storage area was analyzed for risk factors. Heavy lifting was identified as a hazard due to how the tires were stored. This was corrected immediately by placing the heavier tires (108 – 125 lbs) on the lowest level and the lighter tires on the upper level.
- Ludtke's shop manager and safety officer successfully demonstrated the ability to complete the caution zone and hazard zone checklists of the ergonomic rule.
- Computer based and video based training and awareness education materials are being developed at this time and will be available for the workers and their supervisors in caution zone jobs in this industry.

Project successes

- An affordable brake drum dolly (\$480) was purchased to eliminate the 110 lb. lift required when changing drums.



Drum dolly with hand crank can lower or raise the drum dolly to the proper level.

- Ergonomics awareness stimulated ideas from employees about safety related ideas not related to the rule. This helped to heighten safety awareness and improve work practices.

- Ludtke installed additional steps, and handholds and a foot rail on dump trucks and trailers to facilitate climbing up onto equipment more safely.



Worker uses handholds that were installed to reduce the risk of injuries from falls.



Employee stands on running toe rail installed on side of truck to reduce the risk of slip and fall injuries.

The automatic tarping device which is operated from the ground eliminates the need to climb the truck bed to tarp a load.



Employee uses an electric tarp device to deploy the tarp across the top of the container while pulling on the tie-down ropes.



Employee hooking down the sides of the automatically deployed tarp.

- Additional decking was installed behind the truck cab to reduce the risk of slips and trips.



Metal decking, additional storage and steps were installed behind the truck cab to reduce the risk of slip, trip and fall injuries.

- During a spring changing job, hydraulic jacks were used to lift the walking beam (a component weighing 183 lbs) to eliminate an awkward team lift. The rear of the truck is also supported by the shop overhead crane.



Employee using hydraulic jack to lift one end of the walking beam before securing it to the truck underbody. This is an alternative to two employees manually lifting the assembly.

During a spring changing job, hydraulic jacks were used to lift the walking beam (a component weighing 183 lbs) to eliminate an awkward team lift. The rear of the truck is also supported by the shop overhead crane

What products were generated?

This report contains an analysis of specific ergonomic hazards found in the trucking industry, findings on a hazard and proposed solutions.

How can those products be used?

Others can use the results of this project in the industry to identify hazards and possible solutions to those hazards. Pictures and video of shop mechanics and truck driver's hazards and solutions can be shared with the trucking industry through inclusion in the industry specific workshop for trucking.

The attached table summarizes the project findings.

Caution Zone Jobs	Hazard Zone Jobs	Risk Factor(s)	Best Practices
Shop Mechanic	<ul style="list-style-type: none"> Shop Mechanic 	<ul style="list-style-type: none"> Awkward posture of the neck High hand force - gripping Heavy lifting 	<ul style="list-style-type: none"> Brake dolly Storage of heavy tires Use of hydraulic jacks for walking beam

Risks Not Covered by Rule	Voluntary Improvements
<ol style="list-style-type: none"> Awkward lift of 35 lb impact wrench from the floor. Potential to fall off the truck when applying a tarp manually. High force to the upper extremity when manually pulling a tarp in place. 	<ol style="list-style-type: none"> Portable counterbalance to minimize vibration exposure and support the weight of the tool. Non-skid toe rails, decking behind the truck cab and grab bars help prevent falls. “Pull Tarp” automatic tarping device.

Additional Considerations	
<ol style="list-style-type: none"> 1. Kneeling and squatting for prolonged periods during brake jobs 2. Frequent use of a power grip and pinch grip with awkward postures of the wrist when using tools and carrying objects. 3. Heavy lifting in removal and replacement of truck tires. 	<p>These are risk factors that were observed but did not elevate to the caution zone. Possible solutions could include the items listed below. They should be re-evaluated on a regular basis.</p> <ol style="list-style-type: none"> 1. Provide a wheeled stool to reduce kneeling and squatting. 2. Use ergonomically designed hand tools, wheeled carts to transport parts and pneumatic tools in place of some hand tools. 3. Tire dolly to move tire into and out of position.

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