

## Transfer Dump Trucks Can Crush Employees

**Employers:** We are aware of two recent fatal accidents here in the Northwest involving transfer dump trucks that have occurred in the past 12 months; one in Washington (December 2008), the other in Oregon (June 2008).

In each incident, the victim's head was caught in a crush point between the truck's 2 dump boxes while the victim operated the transfer system. Although the truck models involved were different, the crush point hazards were similar on both trucks.

### What is a transfer dump truck?

A transfer dump truck is a standard dump truck which pulls a separate container (the "B" box) on a trailer. The B box isn't designed to independently dump its load, so it must be moved (transferred) into the emptied main dump box ("A" box) before dumping can occur. After the transfer, both boxes are raised together to dump the B Box. This differs from a "truck and pup" system in that a pup is able to independently dump its load.

During transfer, the B box is pulled forward by electric, pneumatic, or hydraulic power until it comes to rest completely inside the A box. The movement of the B box into the A box is not slow; during the Washington investigation, the empty B box was found to have moved about 16 inches per second.

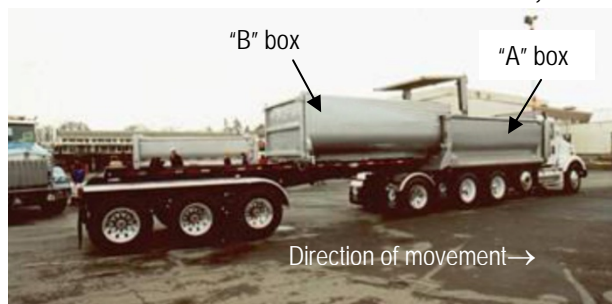
Operators use a transfer control, consisting of a positive-pressure lever (also known as a dead man's switch), to move the B box into and out of the A box. This lever must be held in the "on" position for the B box to move. When the lever is released, movement stops.

A latch mechanism on both dump boxes keeps them together during dumping. The parts of this mechanism jut out from the side frame of both dump boxes, creating a protruding crush point.

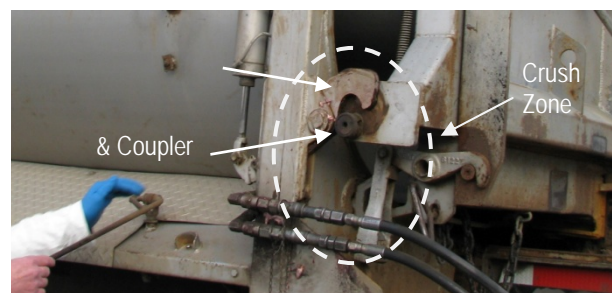
### What caused these accidents?

The design of most transfer dump trucks allows operators to place themselves in the crush zone while they activate the transfer control. In both fatalities the crush point was located at about head height. One of the trucks had a caution pinch-point sign posted near the transfer controls. Based on the information available, both operators positioned themselves (knowingly or unknowingly) inside the crush zone. One individual was visually checking for a clearance problem. The other individual may have been looking or listening for mechanical problems or blockages. In both cases, it's possible that the operators misjudged the speed of the B box movement or thought they were clear of the B box, forgetting about the protruding latch mechanism.

In addition to these two fatal accidents, a third accident occurred just one month after the Washington fatality. In this case, the victim survived being impaled through the upper torso (below the shoulder area) while he operated the transfer controls. Apparently, the individual was not aware of the crush point hazard.



"B" box moves into the main dump box ("A" box) during transfer.



Danger: Crush Zone! The latching mechanism (hook & coupler) connects as "B" box moves completely into "A" box, creating a crush point that can kill or seriously injure operators.

## What can I do to protect employees from this hazard?

If your employees operate transfer dump trucks, including rentals, check to see if the latch mechanism creates a crush zone accessible to the transfer operator. If this is possible, take preventative measures such as:

1. Paint the latch mechanism parts on both dump boxes to improve hazard visibility and operator awareness. Use bright orange or other warning color.
2. Consider moving the transfer controls farther away from the crush zone, so that a worker cannot enter the hazardous zone.
3. Install an auditory alarm that sounds while the B box is moving.
4. Make sure operators are fully trained on how the transfer system works, the crush zone area they must stay clear of, and the quick speed at which the B box moves. Train operators to visualize the crush zone as the B box moves and to stand clear when operating the lever.
5. After training the operators, have them each practice the transfer procedure under supervision. If operators will need to look through the opening between dump boxes during transfer, have them practice how to keep their body position safely clear of the crush zone.
6. Train other employees who work around or near transfer dump trucks to always stand well back from the trucks when the B box is moving. Inform the operator to always warn others before transfer begins.
7. Install vivid warning placards by the transfer controls.
8. Provide a copy of this hazard alert to operators and other employees who work around transfer dump trucks and post a copy in the cab of each truck.

### Other resources

- For free training materials, safety rule information, and other resources for various safety topics, visit <http://www.lni.wa.gov/Safety/Topics/AtoZ/default.asp>

### How can I get help from Labor & Industries?

The Department of Labor & Industries provides consultations, training, and technical assistance at no cost to employers. Call today to schedule a confidential consultation or go to [www.SafetyConsultants.Lni.wa.gov](http://www.SafetyConsultants.Lni.wa.gov) for more information. You may also call 1-800-423-7233 or visit a local L&I office and ask for the consultation supervisor.

*Hazard Alert inside*

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