



Kansas LTAP Fact Sheet

A Service of The University of Kansas Transportation Center for Road & Bridge Agencies

Watch Your Back! You Could Hit Someone

By Lisa Harris

Backover incidents are crashes that occur when a driver reverses into and injures or kills a non-occupant. Some backover incidents can be fatal; others can result in serious non-fatal injuries, such as amputations, compound and simple fractures, and crushing injuries.

An OSHA Request for Information on backover accidents, issued last year, included a description of the scope of the problem. In a search of its database for fatal accidents involving backover hazards, OSHA identified 358 fatal incidents in the United States over a 6-year period; 61 of these deaths involved dump trucks and 20 deaths involved garbage trucks.

Some interesting facts about this data:

- Eight of the persons on the ground who were struck were using cell phones at the time.
- Twenty-five of the victims were acting as spotters for the vehicles that backed over them.
- Highway work zones are of particular concern because workers routinely work in noisy conditions in close proximity to mobile equipment and construction vehicles. In fact, ARTBA reported that backing accidents statistically account for approximately 50 percent of all fatalities involving construction equipment in roadway work zones. A high percentage of those involved a dump truck.

This article covers basic steps in backing-up safety and provides information on a new safety video produced by KDOT that will definitely make an impression on any road crew.

The sidebar on page 3 contains some safety principles for backing up a vehicle. Take time to review these. A theme in the safety practices is training, both for your drivers/operators and for employees who will be working near moving vehicles. Make backing-up safety a regular part of your safety training.

There's no better way to illustrate the problem of backover accidents than to hear from the people who have been involved in them. A new safety awareness DVD by KDOT does just that. See the sidebar on this page.

A Youtube video we found contains backing up advice from field construction professionals. The video especially targets the experienced driver (<https://www.youtube.com/watch?v=LJYVe3RriM>). One man said: "Look behind every single time you back up. The experienced driver gets sort of



This spotter is using hand signals to direct a flatbed truck in backing up. The spotter is clearly visible to the driver.



set in a pattern and that pattern can kill you, and it can kill someone else." Another person, when talking about fork lifts, said: "Most of the time [operators] concentrate on the forks in front of them ...they look behind and nobody is there, and they don't expect that to change, but it can. And that's what we constantly need to be aware of." That cautionary advice applies to operators of skid steer loaders and other mobile equipment, too.

For more information

The potential for a back over incident at a work zone, or anywhere else, is to be taken seriously. KDOT's DVD shows that this problem can happen in Kansas as well as anywhere. Training in backing safety is now an especially high priority at KDOT.

Other videos on the topic are:

- Avoiding Runovers and Backovers. This was produced by ARTBA in 2009. It costs \$200 for members and \$250 for nonmembers. Call ARTBA at (202) 289-4434 for details.
- Backing. A 10-minute video produced by the Montana DOT. The production is dated (1980) but the advice is still relevant. It is available for loan from the Ohio LTAP Center at



New KDOT Video Brings the Issue Home

A new safety awareness video by KDOT, called **Goal: Get Out and Look**, sends a powerful message on the importance of using utmost caution when backing up. The message is delivered through interviews with people who were injured by or witnessed backover incidents on KDOT projects. Some examples:

Marion, KS — A worker was doing some clean-up work around a patch. He stepped out to sweep, and a backing up dump truck knocked him down and ran over his leg. The driver said "I should have had a person spotting as I backed up. Someone on one side the truck, [visible] in the mirror. If it can happen to us, it can happen to you."

Scott City, KS — A worker on a pothole patching job stepped into the path of a backing-up Bobcat and was knocked down. He barely missed being run over by the differential. The employee assumed the operator was going forward but he was backing up. The worker said things should have been done differently; they were working short-handed, doing two jobs, and they were in a hurry at the end of the day. Also, the work zone was cluttered with equipment.

Hoxie, KS — A KDOT employee (pictured above) was at an asphalt plant, doing a walk-around for his own truck, and was pinned between his truck and one backing up. He thought the driver could see him. It took two years and 11 surgeries to recover from the five places broken in his arm and shoulder. His advice is to stop, look, and listen, no matter where you are driving or working.

To request a copy of this video on DVD, email Kelly Gaer at kellyg@ksdot.org or call (785) 296-4256.

Kansas DOT

614-466-2120. Free.

- Backing—You Owe it to Yourself. Produced by Pennsylvania DOT in 1983 and available from Kansas LTAP. Free.
- Dump Truck Operation Part 2. Produced with the Utah DOT in 1993 and available from Kansas LTAP. Free.

For Kansas LTAP videos, go to <http://www.ksltap.org> and click on Lending Library.

Also, consult the sources below for more information on backing. You can help your coworkers be safer out there. ■

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[See page 3 of this fact sheet]



Key Principles to Safer Backing

- Avoid backing up unless necessary; organize the work area to minimize backing.
- Park vehicles so the driver can leave in a forward motion, and choose a place free of congestion when possible.
- Implement and enforce procedures that minimize exposure of workers on foot to moving vehicles and equipment.
- Back up vehicles and equipment only in designated areas.
- Perform a walk-around to determine obstacles/hazards and site/vehicle clearances.
- Provide personal protective equipment and high-visibility clothing for workers, and require its use.
- Before driving, make sure mirrors are positioned properly.
- Ensure that drivers are in communication with workers who are on foot near the vehicle.
- Equip all vehicles and equipment with backup alarms and check them prior to operation to ensure they are in proper working condition.
- Keep vehicle windows down when backing or driving in the vicinity of pedestrian workers.
- Turn off radios, cell phones or other distracting devices when backing up, or if on foot in the vicinity of a backing vehicle.
- Designate a spotter to direct vehicle backing, and ensure that the driver and spotter agree on hand signals to use.
- Train the driver or operator to stop the vehicle if the spotter is out of view and can't be clearly heard.
- Train workers on the specific duties they are to perform during backing maneuvers.
- Train workers to recognize equipment blind areas. Consult NIOSH's Highway Work Zone Safety, Construction Vehicle List (<http://www.cdc.gov/niosh/topics/highwayworkzones/BAD/>). If the vehicle is not listed, estimate the vehicle's blind zone: Sit in the driver's seat, have another person walk away from the vehicle until the driver can see his/her feet, measure distance. For side and rear, repeat the process using side and rear mirrors. The area within the measured distance is the blind zone.
- Install after-market detection devices (e.g., cameras, radars, and ultrasonic devices) on construction equipment to monitor workers on foot in blind areas. [These devices can malfunction, however, so it is best to have a spotter as well. These devices can also give false positive readings that might lead the driver to disregard a warning.]

Sources:

- 1) "Issue: Backing Safety," Transportation Builder, ARTBA, 2013.
- 2) Preventing Backover Injuries and Fatalities, Request for Information, OSHA, 2012.
- 3) Michigan Fatality Assessment and Control Evaluation (FACE) report on blind spots. See full references in Sources on page 5.



Sources:

- Issue: Backing safety. Transportation Builder magazine, American Road & Transportation Builders Association (ARTBA), March-April 2013. <http://www.artba.org/news/publications/transportation-builder/>
- Goal: Get out and look. Video/DVD. Kansas Department of Transportation. 2013.
- Preventing Backover Injuries and Fatalities. Occupational Safety and Health Administration (OSHA). March 29, 2012. <http://www.regulations.gov/#!documentDetail;D=OSHA-2010-0059-0001>
- Michigan FACE report on blind spots, May 5, 2011. <http://www.oem.msu.edu/userfiles/file/MiFACE/Blind%20Spots%2011.pdf>