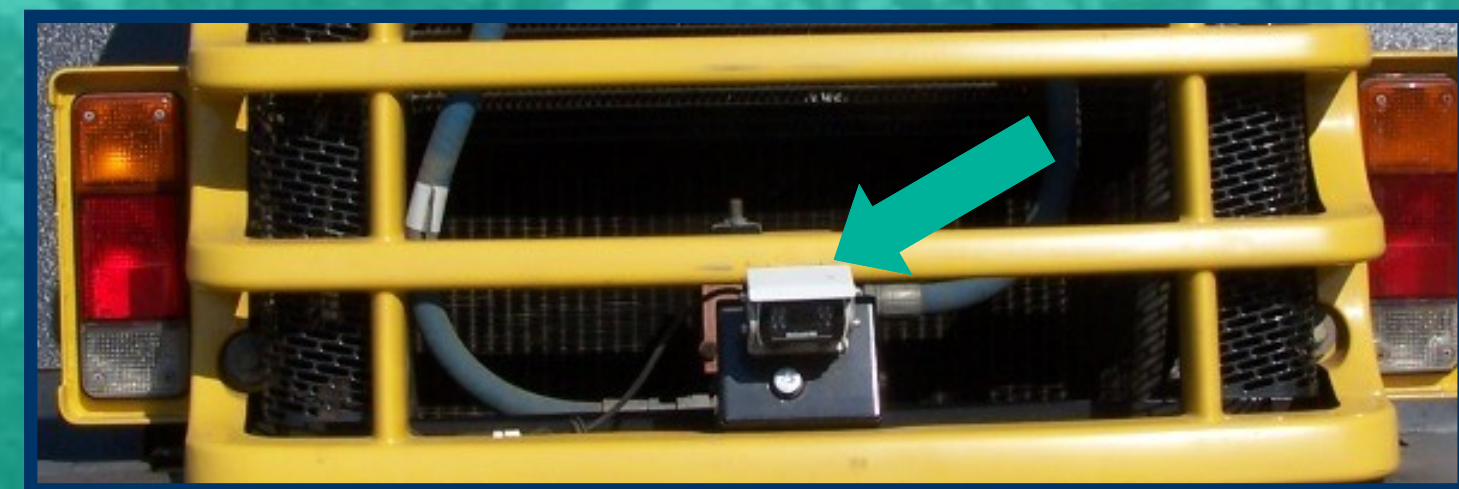
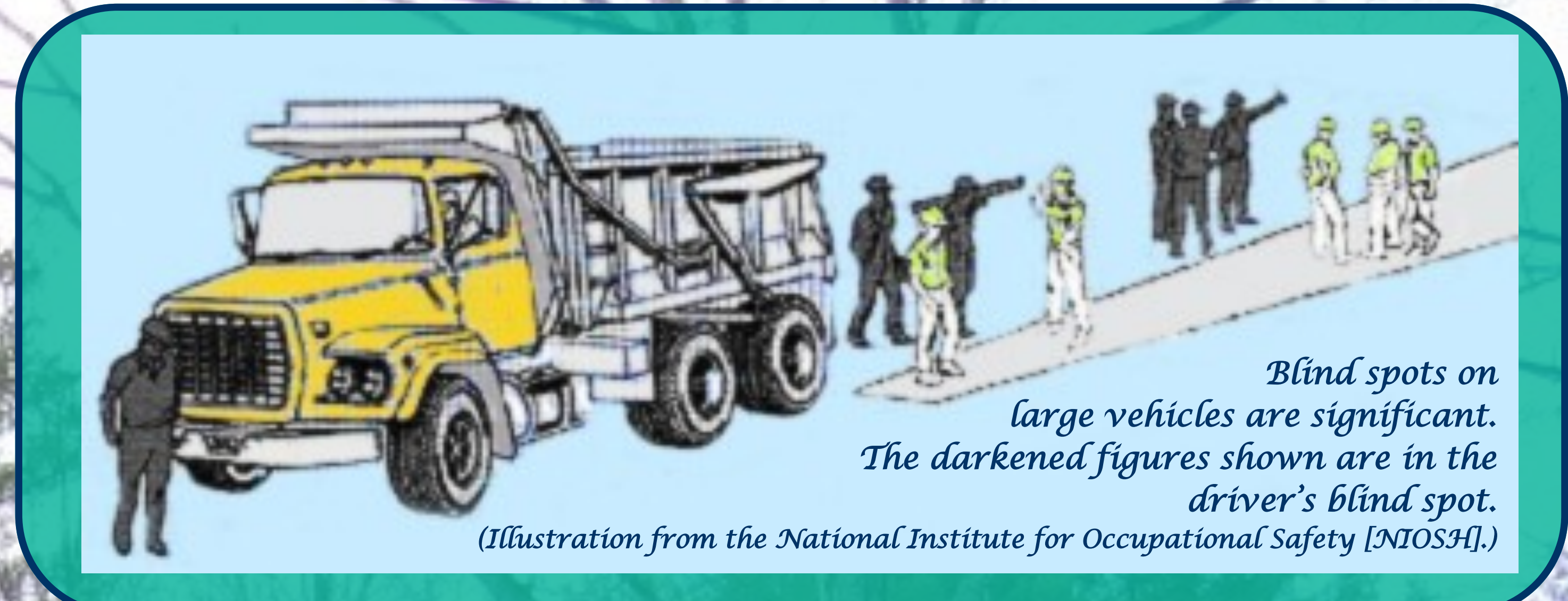


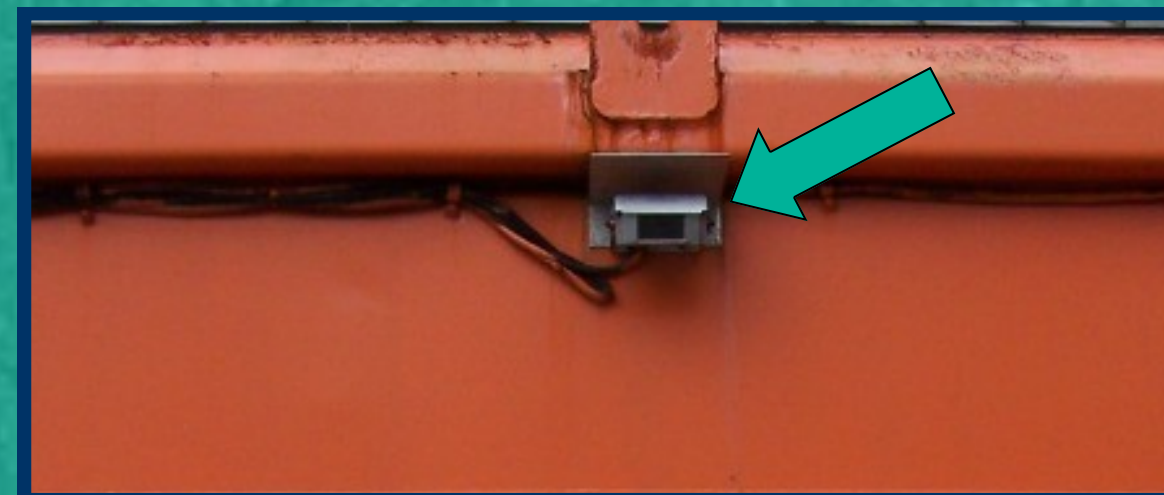
# PERFORMANCE OF BACKING CAMERAS ON NHDOT MAINTENANCE VEHICLES

## BACKGROUND

Every year thousands of accidents occur when a backing vehicle strikes something or someone. The National Safety Council estimates that 25% of all accidents involve backing and cause approximately 500 fatalities each year, many of which involve children. Large vehicles have significant blind spots to the rear. The NHDOT operates many of these types of vehicles, including snow plows, dump trucks, loaders, and graders. During 2006, 2007, and 2008, the NHDOT had 117 accidents related to backing, which resulted in approximately \$138,000 in property damage. Fortunately, none of these accidents resulted in serious injury or death. Approximately 90% of these accidents were classified as preventable.



Backing cameras mounted on the back of vehicles



## THE STUDY

In 2009, systems were provided to NHDOT by two manufacturers to be installed on NHDOT vehicles for this trial. The vehicles were selected based on backing maneuvers required. At the conclusion of the study, the drivers were interviewed for their opinions relative to performance of the camera as well as perceived safety benefits.

- Cameras were installed on these vehicles:
- Two Freightliner six-wheeled dump trucks
  - One International 4600 six-wheeled dump truck
  - Two International 4900 six-wheeled dump trucks
  - One Komatsu front-end loader



Views on cab monitor

## CONCLUSIONS and RECOMMENDATIONS

This evaluation indicated that backing cameras improved safety and operation. Knowledge gained through this study resulted in recommendations for improved camera placement and system configuration to enhance effectiveness. The type of construction operation being performed is an important consideration relative to the location of the camera, and cameras should have automatic shutters to prevent snow from obscuring them. Location of the monitor in the cab needs to be considered, and shields to decrease sun glare would be beneficial. Loaders and graders would also be good candidates for backing camera systems.

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