



NIOSH Safety Topic: Blind Areas Around Equipment

Excerpted from the National Institute for Occupational Safety and Health (NIOSH) website at:
www.cdc.gov/niosh/topics/highwayworkzones/BAD

Studies show that highway and street construction workers are at a significant risk of fatal and serious nonfatal injuries while working in and around a street/highway construction jobsite. In addition to the risk of injury from passing motor vehicle traffic outside the work zone, there is an equally hazardous risk of injury from movement of construction vehicles and equipment within the work zone. In analyzing the data collected on fatalities and serious nonfatal injuries occurring from 1992-1998, researchers from the National Institute for Occupational Safety and Health (NIOSH) have concluded that "safety efforts must also protect construction workers within work zones who are working on foot around moving vehicles and equipment..." [Pratt et al., 2001]. Collision occurrences have been attributed in part to limited visibility around the equipment.

Within this website you will find detailed diagrams to assist in visualizing the areas around various construction vehicles and equipment that are unable to be seen from the operator's position. These areas are commonly referred to as Blind Areas. For each construction vehicle, three different Blind Area Diagrams are available to represent the ability of the operator to see an object at three different elevations: ground level, 900 mm (3'), and 1500 mm (4' 11"). The 900 mm plane represents the average height of a channelizing device, e.g. construction barrels that are commonly used in road construction. The 1500 mm plane corresponds to the height of a 4' 11" person. (Example Diagram is shown on Page 2 of this article)

NIOSH is providing this information on blind areas primarily for safety personnel and instructors to use as a training aid to develop awareness about hazardous areas around construction vehicles and equipment due to limited visibility. The test procedures for developing the Blind Area Diagrams are also given within this website by selecting the appropriate link located on the right side of the page. This information is provided in the event safety personnel or instructors would like to develop their own Blind Area Diagrams.

For more general information on highway work zone safety and how to protect workers, visit the NIOSH Highway Work Zones web page: www.cdc.gov/niosh/topics/highwayworkzones

Disclaimer: The blind area diagrams are reproduced as received from the contractor, Caterpillar Inc., under NIOSH contract number 200-2002-00563. The opinions, findings, and conclusions expressed herein are not necessarily those of the National Institute for Occupational Safety and Health (NIOSH). Furthermore, mention of any company or product does not constitute endorsement by NIOSH.

Additional Information and Links

Other useful and informational topics and links found in this section of the NIOSH website include:

NIOSH Protecting Workers in Construction - Preventing Injuries Related to Motor Vehicles and Equipment

Building Safer Highway Work Zones: Measures to Prevent Worker Injuries from Vehicles and Equipment

In-house Fatality Investigations Reports on Worker Deaths in Highway Work Zone

State-based Fatality Investigations Reports on Worker Deaths in Highway Work Zone

NIOSH Hazard Review: Work-related Roadway Crashes: Challenges and Opportunities for Prevention

Preventing Injuries and Deaths of Workers Who Operate or Work Near Forklifts

Preventing Injuries and Deaths From Skid-Steer Loaders

Preventing Worker Injuries and Deaths from Traffic-Related Motor Vehicle Crashes

Preventing Deaths and Injuries from Excavation Cave-ins

Preventing Injuries When Working With Ride-On Roller/Compactors

Example Blind Area Diagram - Caterpillar 12G Grader

Cat 12G
1500 mm Level

