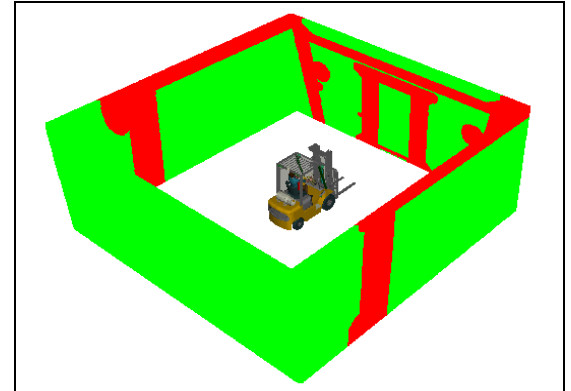


Forklift Research Project Fact Sheet

Computer Simulation Line of Sight Assessment

OBJECTIVE:

To establish a standardized method to evaluate line of sight for a lift truck, using computer simulation tools.



Background

The inability of lift truck operators to clearly see people, objects or hazards around the workplace has contributed to a number of accidents, as well as fatal injuries. In order to identify vehicle design characteristics resulting in restricted and blocked sightlines, visibility assessments are traditionally completed in the field. However, field methods are unable to evaluate visibility under dynamic operating conditions and are limited in their ability to provide feedback on the impact of various operator influences such as sitting height and posture.

Results of this research show computer simulation and virtual reality can be successfully used to evaluate visibility during the operation of LHD vehicles.

Methodology

Classic JACK is a human simulation software package using a fully jointed three-dimensional human figure capable of real-time motions and animations. The interactive environment allows the user to see what JACK sees and it allows JACK to walk with accurate human motions, reach and grasp with fully articulated fingers and bend and lift according to appropriate human parameters. The JACK human is positioned in the seat of the lift truck. Line of sight from the operator's position is evaluated similar to previous field methods.

Computer simulation has enabled the research team to quantify visibility from specific machines and identify the benefits of design modifications.

Applications

Virtual Environment: Allows quick and cost-efficient method of investigating design components.

Visibility Analysis: Analyze through Line-of-Sight Testing, Obscuration Zones and LOS boxplots to quantify what area is visible to the operator.

Retrofit Testing: Allows testing of potential modifications without spending money and material on trial runs or untested solutions.

For more information

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