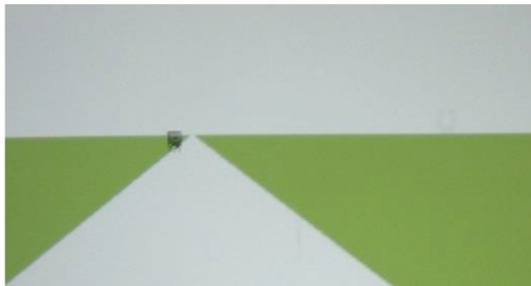


Applying Findings on Intelligent Warning Beacons to Rear Vehicle Lighting for Maximizing Safety

John D. Bullough and Mark S. Rea

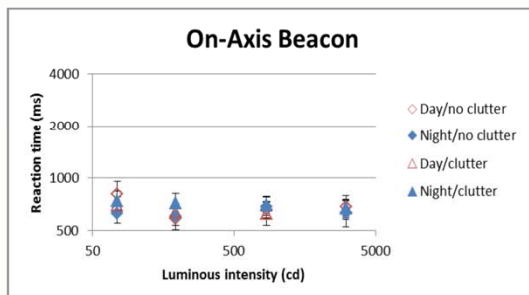
Lighting Research Center, Rensselaer Polytechnic Institute

Rear signal lighting on vehicles is critical for safe driving during both daytime and nighttime. An innovative study of intelligent warning beacon configurations for service vehicles addressing human factors requirements, communications and sensor technologies is underway.



Portion of a projected scene simulating a service vehicle at the side of the road.

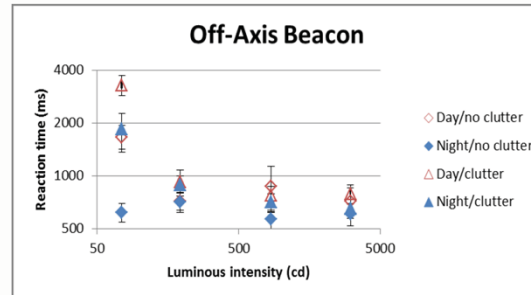
This study will yield information about the luminous intensity distribution, temporal and spatial configurations and advantage of coordination among multiple light sources for ensuring safe passage by drivers around service vehicles using warning beacons.



Reaction times to the onset of an on-axis flashing warning beacon as a function of its maximum intensity.

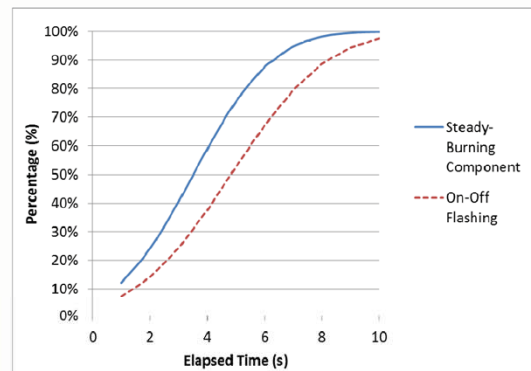
This information can have direct implications for rear vehicle lighting for passenger automobiles and all other vehicles on the road. The findings from this study will inform new specifications of rear vehicle lighting and its potential to adapt to different ambient, weather and traffic conditions to create intelligent, visually effective,

consistent and meaningful signal lights that will increase driving safety.



Reaction times to the onset of an off-axis flashing warning beacon as a function of its maximum intensity.

The results can also impact standards and regulatory issues that must be addressed to maximize safety and information from rear vehicle lighting.



Cumulative percentage of observers detecting closure of a pair of flashing lights for lights with and without a steady-burning component.

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