

# The Safety and Fuel Saving Effects of a Signalized Intersection Warning System for Bus Driving

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## Abstract

This study conducts a bus driving simulation to analyze the safety and fuel saving effects of a signalized intersection warning system. The operational characteristics of bus drivers are collected, including red light violations, perception-reaction time and deceleration rate. After basic statistical analysis and factorial analysis of variance, the experimental results indicate that the warning system can provide good expectancy of traffic conditions in front of bus drivers and shorten their perception-reaction time. It should be helpful for bus drivers in responding to the red lights and enhance the safety at intersections. The warning system is also helpful in slowing down buses smoothly. The lower deceleration rate at an intersection will improve bus driving safety and enhance the fuel saving effects. In addition, the best warning timing during a red interval is the time when an approaching bus is detected at a distance of 80 meters in front of the stop line.

Keyword : Bus, Driving Simulation, Safety, Fuel Saving, Signalized Intersection.