Evaluation of Large Truck Crashes at Horizontal Curves on Two-Lane Rural Highway in Kansas

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Abstract

The objective of this study was to investigate the relationship between roadway and environmental-related factors and truck crash severity at horizontal curves located on rural, two-lane state highways in Kansas. Single vehicle truck crashes and multi-vehicle crashes involving at least one truck were extracted from the Kansas Department of Transportation’s crash and roadway databases for the years 2006-2010, resulting in 452 possible crash records. Descriptive statistics and 95 percent confidence intervals were constructed for an odds ratio analysis comparing single-vehicle truck crashes to multi-vehicle crashes involving at least one truck for the variables that were included in both databases. Overall, the odds ratio analysis indicated that single vehicle truck crashes were less likely to occur on wet pavement with shoulder rumble strips present and during non-adverse weather conditions compared to multi-vehicle crashes involving at least one truck. Single-vehicle truck crashes were also more likely to result in an injury crash compared to multi-vehicle crashes involving at least one truck. The latter were more likely to result in a fatality or property damage only crash. The study was designed to be an exploratory analysis, providing preliminary guidance to further investigate truck crashes at horizontal curves.

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