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16. Abstract

Texas has the highest number of fatal crashes involving large trucks in the US since 1994, and this number in 2012 grew by 82% from 299 crashes in 2009. Due to the size and weight, crashes involving large trucks are usually more destructive, and therefore are a major health and safety concern for Texans. Studies are needed to better understand the risk factors related to large truck crash and identify effective countermeasures to reduce crash involving large truck. The goals of this research are to analyze the risk factors of large truck involved crash, recommend low-cost, high effective countermeasures, as well as determine about how many large truck crashes can be reduced by specific countermeasures implementation .To achieve the research goals, the research team (1) conducted crash data analysis to identify the crash hot spots and contributing factors to the large truck involved crashes; (2) conducted risk assessment in order to prioritize the risk factors; (3) surveyed truck drivers to validate the identified crash risk factors; (4) identified potential effective countermeasures for preventing large truck-involved crashes; (5) conducted cost benefits analysis and recommend the most cost-effective countermeasures. Finally, 14 crash risk factors related to roadway conditions, traffic control, drivers and vehicle characteristics were identified, and 24 cost-effective safety countermeasures related to traffic engineering, traffic law enforcement, road user education, emergency response, were identified, and their costs and benefits were analyzed.

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