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16. Abstract

As previously reported using daylight saving time crash analysis, fatal rear-end crashes between passenger vehicles and trucks show a pronounced effect of light level such that crashes involving trucks appear to be nearly nine times more likely in darkness than in light. In this report, we examine whether this effect shows any evidence of being modulated by the age of the striking driver, the travel speed or locale of the roadway, the involvement of alcohol, or by changes in regulations prescribing the use of conspicuity treatments for trucks beginning in 1993.

In general, a main effect of striking driver age was found such that younger drivers had a lower dark/light ratio in nighttime fatal rear-end crashes than older drivers. In addition, a main effect of struck vehicle suggested that the dark/light odds of a crash is about four times higher for trucks than for light vehicles. Analyses of locale, posted speed, and alcohol use by the striking driver revealed only a mild influence of locale, suggesting that the dark/light odds is 1.5 greater in rural than in urban areas. Finally, the analysis of regulatory changes in conspicuity treatment did not reveal a reliable effect specific to trucks, but did suggest that the dark/light odds of a crash has decreased by about half in recent years for both light vehicles and trucks.

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