Motorcycle Right-of-Way Accidents: A Literature Review

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Abstract

The most typical automobile-motorcycle collision take places when an automobile manoeuvres into the path of an approaching motorcycle by violating the motorcycle's right of way (ROW). The present paper provides a comprehensive review of past research that examined motorcycle ROW accidents. Articles and publications were selected for relevance and research strength through a comprehensive search of major databases such as Transportation Research Information Services (TRIS), Compendex, and Medline.

Two major causes of such a crash scenario are the lack of motorcycle conspicuity and motorist's speed/distance judgment error, respectively. A substantial number of studies have manipulated physical characteristics of motorcycles and motorcyclists to enhance conspicuity, along with research addressing motorists' gap-acceptance behaviours and arrival time judgments when confronting motorcycles.

Although various conspicuity aids have proven effective, some researchers reported that motorcyclist's/motorcycle's brightness per se may be less important as a determinant of conspicuity than brightness contrast between the motorcyclists and the surroundings. Larger vehicles tended to be judged to arrive sooner than motorcycles. Such a speed/distance judgment error is likely attributable to some psychological effects such that larger automobiles appear more threatening than motorcycles. Older motorists particularly have difficulties in accurately estimating he distance and the speed of an approaching motorcycle. Research examining the effects of conspicuity measures on motorists' speed/distance judgments when confronting motorcycles has been rather inconclusive.

Past research offers valuable insight into the underlying motorcycle ROW crash mechanisms. However, with ageing society and a rapid change in traffic composition (e.g., more larger motorcycles) in recent years, prior research findings should be updated. The present study finally provides recommendations for future research on motorcycle ROW accidents.