

Motorcyclist Braking Performance in Stopping Distance Situations.

ABSTRACT

Motorcycle braking distance is one of the main components of motorcycle stopping sight distance. Motorcycle braking performance in different situations was not consistent in published literature. This research measured the riders' braking distances and decelerations to both unexpected and expected objects. For braking maneuvers to an expected object, 89 motorcycle riders released the accelerator and applied the brake as quickly as possible following activation of a light beside the road of both dry and wet pavements. As for an unexpected object, 16 nonalerted subjects were confronted with the need to stop for an unexpected object along the roadway. Vehicle speeds, braking distances, and average deceleration were computed for each braking maneuver. Results showed that the deceleration varied among the riders in which 90% of riders' decelerations were at least 2.75 m/s² under wet conditions, whereas 90% of all riders decelerated at least 3.3 m/s² on dry pavements. Overall, the motorcycle braking distance is more than the braking distance of passenger cars. These findings suggest that in countries where motorcycles are heavily used, their roads should be investigated for provisions of adequate motorcycle stopping sight distance, especially if the roads were designed according to AASHTO guidelines.

Keyword: Motorcyclist braking performance; Motorcycle braking distance; Motorcyclist deceleration rate