

Motorcycle characteristics for sight distance investigation on exclusive motorcycle lanes.

ABSTRACT

In developing Association of Southeast Asian Nations (ASEAN) countries, the motorcycle is a popular means of transportation because it is cheap and provides flexible door-to-door mobility. However, motorcyclists are also highly involved in road accidents. Separating motorcycles from other vehicles in traffic by providing motorcycle lanes is a good engineering measure to improve the safety of motorcyclists. In designing motorcycle lanes, considerations of geometrical elements such as horizontal and vertical curve lengths, stopping distances, and passing sight distances are essential. This study attempts to quantify the eye levels and head levels of motorcycle riders and motorcycle headlight and taillight height characteristics that influenced these geometrical elements. Characteristics of the motorcycles observed along the existing exclusive motorcycle lanes in Selangor state of Malaysia were transcribed from a camcorder, using reference dimension. Findings recommend a design motorcycle eye height of 1,350 mm (5th percentile), headlight height of 800 mm (5th percentile), and taillight height of 625 mm (5th percentile). A motorcyclist height of 1,525 mm (10th percentile) is recommended for the design of sight distance. Recommended heights reduce the cost of motorcycle lane construction with demonstrated safety compared with the current criteria.

Keyword: Motorcycle characteristics; Motorcycle lanes; Motorcycle lane geometrical design.