

Regulation No. 22 (Protective helmets)

Motorcycle is the major mode of transport in many Asia countries. Near to 60 percent (accounted near to 8 million units) of registered motor vehicles in Malaysia are motorcycles. Majority of these motorcycles are with smaller engine capacity (less than 125cc). The same trend goes to Taiwan and Vietnam, and more than 70 percent in Cambodia.

The video was an outdoor full scale crash test carried out by University Putra Malaysia, where a smaller motorcycle with a 50th percentile non-instrumented dummy (due to financial constraint and fully instrumented dummy was far beyond reach). The outcome indicated that a potential contact impact between the head with helmet and the sharp edge of a typical guardrail post. Furthermore, the kinematics of the head-neck-body during the contact impact was clearly evidence for certain potential risks of cervical injuries.

Contact impact of motorcycle onto guardrail / w-beam was of high risk. We wish to highlight one of our findings on our Exclusive Motorcycle Lane (where only with motorcycles, next to certain expressway, and guardrails are planted in between the exclusive motorcycle lane and the normal traffic lane.) in Malaysia, with regards to hitting roadside objects. 23.5 percent of fatal cases involving guardrail. Furthermore, it is 1.7 times more likely to cause severe injury and non-object related motorcycle crashes along exclusive motorcycle lane. Furthermore, guardrails have the highest frequency of involvement (32.7 percent) from all crashes involving roadside objects on exclusive motorcycle lane. [Ref: S.H. Tung, S.V. Wong, T.H. Law, R.S. Radin Umar, Crashes with roadside objects along motorcycle lanes in Malaysia, International Journal of Crashworthiness, 13(2), Taylor & Francis, 205-210 (2008)].

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