

The Role of Experience and Advanced Training on Performance in a Motorcycle Simulator

Abstract

Author information: DavidCrundalla, Alex Stedmonb, ElizabethCrundallc, Rossukorn Saikayasitc

Published in: Accident Analysis & Prevention, Volume 73, December 2014, Pages 81-90

Highlights

- Novice, experienced and advanced motorcyclists were tested on a motorcycle simulator.
- Advanced riders had slower speeds and displayed greater variation in lane position in 40 mph (urban) zones compared to other riders.
- The variance in lane positions of experienced and advanced riders was similar in 60 mph zones.
- Advanced and experienced riders varied their lane position in curves more than novices, though advanced riders still differed to experienced riders in some conditions.
- Motorcycle experience improves rider behaviour over that of novice riders, but advanced training arguably shows the greatest benefits.

Motorcyclists are over-represented in collision statistics. While many collisions may be the direct fault of another road user, a considerable number of fatalities and injuries are due to the actions of the rider. While increased riding experience may improve skills, advanced training courses may be required to evoke the safest riding behaviors. The current research assessed the impact of experience and advanced training on rider behavior using a motorcycle simulator. Novice riders, experienced riders and riders with advanced training traversed a virtual world through varying speed limits and roadways of different curvature. Speed and lane position were monitored. In a comparison of 60 mph and 40 mph zones, advanced riders rode more slowly in the 40 mph zones, and had greater variation in lane position than the other two groups. In the 60 mph zones, both advanced and experienced riders had greater lane variation than novices. Across the whole ride, novices tended to position themselves closer to the curb. In a second analysis across four classifications of curvature (straight, slight, medium, tight) advanced and experienced riders varied their lateral position more so than novices, though advanced riders had greater variation in lane position than even experienced riders in some conditions. The results suggest that experience and advanced training lead to changes in behavior compared to novice riders which can be interpreted as having a potentially positive impact on road safety.