New clues to road safety with use of motorcycle simulator

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New research using a world leading motorcycle simulator to analyse rider behaviour has proved that safer doesn't necessarily mean slower and that formal advanced training for bikers can demonstrate improved safety on our roads.

The study was carried out by researchers at The University of Nottingham's Centre for Motorcycle Ergonomics & Rider Human Factors. The preliminary results of the research are published today by the Institute of Advanced Motorists (IAM) which funded the research.

Motorcyclists are badly over-represented in accident statistics. As of June 2010 motorbikes made up less than four per cent of the total number of licensed vehicles on UK roads but accounted for 21 per cent of all UK road fatalities. Car drivers typically cause two out of the three most common motorcycle accidents in the UK, but a significant number of accidents are still caused by the riders themselves.

The aim of the research was to investigate the attitudes, behaviours and skills of different types of riders according to their level of experience and training. A unique approach was designed to find out whether or not riders with advanced training, ride differently to novice or experienced riders who don't have an advanced qualification.

The simulator uses a Triumph Daytona 675 motorcycle mounted on a custom rig designed and built at the University. It creates a realistic, interactive, research tool using 'STI-SIM Drive' simulation software which projects different riding scenarios onto a large screen in front of the rider.

Three groups of riders were put through identical scenarios on the simulator as well as other tasks in the laboratory to test aspects of their hazard perception and behaviour. The findings showed that experience on its own does not make riders safer on the road and in some cases the experienced riders behaved more like the novice riders. Advanced riders used better road positioning to anticipate and respond to hazards, kept to urban speed limits, and actually made better progress through bends than riders without the formal advanced training.

Dr. Alex Stedmon from the Human Factors Research Group, said: "This is one of the most in-depth studies of its kind ever conducted. It's been a fantastic opportunity for us in the Faculty of Engineering to work alongside colleagues in the School of Psychology focusing on high impact research with a relevance to all motorcyclists. It has demonstrated clear differences between the rider groups and potential benefits to advanced training above and beyond rider experience and basic training. Whilst experience seems to help develop rider skills to an extent, advanced training appears to develop deeper levels of awareness, perception and responsibility. It also appears to make riders better urban riders and quicker, smoother and safer riders in rural settings."

Dr. David Crundall from the School of Psychology added: “This is real cutting edge research and the hazard perception results, in particular, have shown that advanced riders were quicker to identify hazards and had a greater awareness on their responsibility to themselves and other road users.”

Neil Greig, Director of Policy and Research at the Institute for Advanced Motorists, said: “We work to promote safer riding, educating riders to maintain momentum and progress where possible. So we were pleased to learn that advanced riders trained by us adopted the safest road position to deal with hazards while still managing to achieve the quickest time through bends. This research proves that the organisation’s advanced system of motorcycle training delivers real and sustainable benefits in anticipation, better road positioning and swift but safe progress in a wide range of road environments.”

Provided by University of Nottingham