Motorcycle Safety

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1 Car drivers' skills and attitudes to motorcycle safety: a review
Crundall, D, Clarke,D, Ward,P, Bartle, C
Great Britain. Department for Transport, London, UK, 2008
Online [accessed 17 July 2009]. **Click here** to view.

Proposes framework for interpreting the literature and evidence on car drivers' skills and attitudes towards motorcyclists. The framework relates attitudes, knowledge and skills/strategies to three behaviours: Does the driver look at the motorcyclist? Does the driver realise that it is a motorcyclist? Does the driver correctly decide whether the motorcyclist poses a hazard? The additional factor of stimulus-driven influences ('bottom-up' influences) is included in the framework. The final conclusion summarises the factors of importance and argues for future directions for research in this area to help reduce motorcycle accidents on UK roads.

2 Effectiveness of antilock braking systems in reducing fatal motorcycle crashes
Teoh, ER
Insurance Institute for Highway Safety, Arlington, Virginia, USA, 2008
Online [accessed 17 July 2009]. **Click here** to view.

The effect of antilock braking systems (ABS) on motorcyclist fatal crash risk in 2005-06 was studied by comparing fatal crash rates per registrations of motorcycles with and without ABS. Fatal motorcycle crashes per 10,000 registered vehicle years were 38 percent lower for ABS models than for their non-ABS versions.

3 Fatal and serious road crashes involving motorcyclists
Johnston, P, Brooks, C, Savage, H
Monograph Number 20, 2008
Australian Transport Safety Bureau (ATSB), Canberra, ACT
Online [accessed 17 July 2009]. **Click here** to view.

Motorcycle usage is increasing in Australia, and the number of serious crashes is rising. This report analyzes recent data on fatal and serious motorcycle crashes. Time trends are shown and comparisons made across road user groups, crash type and national and international jurisdictions. Age and helmet usage is also analysed.

4 **Factors associated with the relationship between motorcycle deaths and economic growth**

Law, TH, Noland, RB, Evans, AW
Accident Analysis and Prevention, 2009
Volume 41, Number 2, pages 234-240.

This paper helps to establish the relationship between Kuznets Curve (a U-shaped curve of deaths in a rising economy) and motorcycle deaths. Kuznets Curve has been applied to road deaths in general but never to motorcycle deaths in particular. As economic conditions rise, so do deaths, associated with greater numbers of vehicles. Later, improved regulation, medical care and technology reduces the per capita road deaths. However, there are many factors which contribute to the U-shape and it cannot be assumed that developing countries will inevitably follow the same path.

5 **Hazard perception and responding by experienced and inexperienced motorcyclists**.

Liu, CC, Hosling, S, Bayly, M, Mulvihill, C, Lenne, MG
Australian Road Safety Research, Policing and Education Conference, 2008, Adelaide, South Australia
South Australia, Department for Transport, Energy and Infrastructure, Walkerville, SA., 8 pages.
Online [accessed 17 July 2009]. **Click here** to view.

The aim of this study was to identify the fundamental skills necessary for hazard perception in motorcycle riding, and to identify the difference in skills between experienced and inexperienced riders.

6 **Helmets for preventing injury in motorcycle riders (review)**

Liu, BC, Ivers, R, Norton, R, Boufous, S, Blows, S, Lo, SK
Cochrane Library Number CD00433, 2008
Wiley, Hoboken, New Jersey, USA
Online [accessed 17 July 2009]. **Click here** to view.

While helmets protect against head injuries, some argue that helmets also reduce motorcycle vision and increase neck injury. This review examines major helmet studies and collates the evidence on mortality, and head, neck and facial injury.

7 **Industry and rider views of ITS for safer motorcycling**
Cairney, P, Ritzinger, A
ARRB Conference, 23rd, 2008, Adelaide, South Australia
ARRB Group, Vermont South, Vic., 11 pages.

VicRoads has identified vehicle-based intelligent transport systems (ITS) as a possible method of reducing the number and severity of motorcycle crashes. Intelligent speed adaptation (ISA), automatic crash notification (ACN) and advanced braking systems, which include anti-lock braking systems (ABS), linked braking systems and emergency brake assist (EBA) are considered. All ITS systems investigated were expected to have positive impacts on motorcycle safety by the expert group, but riders were generally more sceptical. Barriers to the uptake of ITS safety technologies are discussed, and actions to advance the case for safety-related ITS, are discussed.

8 **Impact of a direct mail safety campaign for motorcyclists**
Friswell, R, Williamson,A, Allsopp,G, Gavin, A, Bryant, P
Australasian Road Safety Research Policing Education Conference, 2008, Adelaide, South Australia
South Australia. Department for Transport, Energy and Infrastructure, Walkerville, South Australia, 6 pages.
Online [accessed 17 July 2009]. **Click here** to view.

Motorcycle crashes commonly occur on curved roads on recreational riding routes in non-urban areas. In 2007, the NSW RTA conducted a safe cornering campaign centred on an information brochure that was mailed directly to all registered motorcycle owners in NSW. To evaluate this direct mail approach, motorcyclists were surveyed at popular rest stops along recreational ride routes before and after the mail out. Younger riders were overrepresented among those who knew but did not use the safest cornering line.

9 **Motor cycle rider fatigue: a review**
Horberry,T, Hutchins,R, Tong,R
Research Report Number 8, 2008
Great Britain. Department for Transport, London, United Kingdom
Online [accessed 17 July 2009]. **Click here** to view.

The aims of this review were to: 1. investigate the incidence of fatigue-related accidents among riders; 2. investigate the causes, symptoms and effects of fatigue on riders; 3. assess the impact of fatigue in riders on possible accident causation; and 4. explore possible countermeasures to combat the effects of fatigue and review campaign strategies that have addressed fatigue and its dangers. Overall, it found that there have been few studies investigating the causes and effects of rider fatigue. This review has provided some insight into the possible causes of fatigue and the likely effects that it can have on motorcycle riders.

10 **Motorcycle and scooter safety summit: the road ahead**
Motorcycle and Scooter Safety Summit, 2009, Canberra ACT.
Australia. Department of Infrastructure, Transport, Regional Development and Local Government
Online [accessed 17 July 2009]. **Click here** to view.

This summit explored key motorcycle and scooter issues to identify the scope for improving existing safety measures and develop new measures.

11 **RIDER: a complete study on accidents involving powered two-wheelers: accident causations, safety equipment and injury mechanisms**
Phan, V, Moutreuil, M, Martin, A, Feurxer, JC, Hermitte, T
International Motorcycle Conference, 7th, 2008, Essen, Germany,
Institute for Motorcycle Safety, Essen, Germany, pages 20-50.

Using in-depth accident reconstruction and analysis methods, the RIDER project examined the cause of powered two wheeler (PTW) accident and injury mechanisms. This study gives guidance to policy, decision makers, scientific community, protective clothing manufacturers, vehicles and the PTW industry for future actions contributing to the improvement of road safety. Rider protective clothes and helmets have been analyzed (both usage and deficiencies). The use and the efficiency of a better braking system for a PTW during an emergency situation have been evaluated. Relevant scenarios of accidents were emphasised according to their frequencies and risks.

12 **Safety, on two wheels**
World Highways (Routes du Monde), 2008
Volume 17, Number 6, pages 63-65.

This article looks at forthcoming improvements to the European standard on barriers, now being modified to include the safety of motorcyclists. Around one of every eight motorcyclists who strike a guardrail is fatally injured. A key danger to motorcycle riders is the support post that is used on conventional barriers. Innovations in barrier design include use of a sub-rail, and a barrier which is installed as a lower steel beam below the existing barrier. Another product is a plastic protection device that fits underneath a steel barrier and prevents the rider from hitting the steel support post. It is quick to install and relatively inexpensive.

13 **Queensland motorcycle safety strategy: 2009-2012**
Queensland. Department of Transport, Brisbane, Queensland, 2009
Online [accessed 17 July 2009]. **Click here** to view.

This Strategy forms a component of the Queensland Road Safety Strategy 2004–2011, setting out a range of actions to improve the safety of motorcyclists.

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