

At the scene

Newsletter of the Centre for Automotive Safety Research

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Vehicle improvements to reduce rear end crashes

In recent work, Robert Anderson and Matthew Baldock found that there is considerable scope in Australia for vehicle improvements to reduce both rear end crashes and whiplash injuries when crashes occur. One suggestion for promoting these improvements is for the Australasian New Car Assessment Program (ANCAP) to implement rear end crash safety assessments.

Robert said, 'Seat testing and scoring could be an important part of these assessments, to ensure an acceptable minimum standard of protection. However, active crash prevention features may be even more important in reducing the incidence of injuries from rear impacts than passive safety features.'

'It would be world-leading to have assessments of primary rear-end crash prevention technology included in an Australian rating scheme', he added.

Primary rear-end crash prevention technology includes the use of improved braking systems such as Brake Assist. This system detects the initiation of an emergency braking response and ensures that maximum braking capability is used, without wheel lock-up. Advances on such systems include those incorporating advanced collision warnings and those that brake in response to emergency situations not detected by the driver. Other primary crash prevention technologies include enhanced rear conspicuity and brake lights that flash in emergency situations.

'Some of these technologies are still being perfected but the early indications are positive', said Matthew.

The importance of combating rear end crashes is underscored by the fact that around 40% of compulsory third party (CTP) claims and 25% of costs in South Australia arise from rear-end crashes. It is understood that similar percentages apply across Australia.

'This high cost of rear end crashes for CTP providers is largely due to whiplash', explained Robert. 'Although most people suffering whiplash following a road crash recover fully, symptoms of whiplash do not fully resolve in around 5% of people; these casualties are left with some level of disability. Some of these people will not return to work after the injury.'

In NSW, whiplash injuries are involved in around 45% of all compulsory third party (CTP) insurance claims and account for over a quarter of CTP costs, thus explaining the high associated costs of rear-end crashes.

The report was commissioned by the *Heads of Compulsory Third Party Insurance, Australia and New Zealand*.

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Message from CASR

Welcome to the first edition of our CASR newsletter "At the Scene". All of us at CASR are committed to doing research that will make a difference and we know an essential step in this process is to make sure that as many people as possible know about our work. This newsletter is part of our increased effort to make our research accessible. We also invite you to attend our new public seminars (see p4). We at CASR are very excited about our research program and we hope you find this newsletter interesting and helpful in your efforts to reduce road trauma. Please contact us if you would like to know more about our research or about CASR.

Mary Lydon, Director
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Current projects

Dementia – managing the licensing of drivers affected by cognitive impairment including dementia

Speed monitoring program including evaluating current speed data recorded in South Australia

On-road observational survey of restraint use in South Australia

Regular analysis and reporting of police fatal crash data

Annual performance indicators of enforced driver behaviours

Evaluation of safety cameras in South Australia

Pedestrian and cyclist safety solutions in the Metropolitan area



Austroads road safety professionals study tour

In October 2008 Lisa Wundersitz travelled to Europe as part of the second Austroads road safety professionals study tour.

Over two weeks the group met with the road safety authorities of United Kingdom, Norway, Sweden, Netherlands and important road safety research organisations such as SWOV Institute for Road Safety Research (The Netherlands), Parliamentary Advisory Council for Road Safety (PACTS-UK), and European Transport Safety Council (Belgium). In addition, the group visited the Norwegian 'Vision Zero' demonstration site where innovative road and infrastructure design are put into practice. The group also benefited from discussions with the Thames Valley Police about the latest intervention programs (diversion schemes) and speed camera partnerships. A visit to Volvo (Sweden) provided interesting insights into future directions in vehicle design.

Lisa found the tour 'extremely beneficial for obtaining first hand knowledge of the latest trends and leading practices in European road safety'.

'It was invaluable to be able to visit some of the best performing road safety countries in Europe'.

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In order left to right:
Bruce Ollason – Main Roads, Queensland (Group leader); Lisa Wundersitz, CASR;
Paul Roberts – ARRB, Western Australia;
David Eyre – Ministry of Land Transport, New Zealand;
Jan Karpinski – Main Roads, Western Australia;
Joel Tucker – RACQ

In the spotlight – Tori Lindsay



Tori has worked with CASR for 11 years and is an integral part of the in-depth crash investigation team. She has been involved in investigating both rural and metropolitan crashes as well as pedestrian accidents. This involvement includes at scene crash investigation, follow up interviews with crash participants, accessing medical records and abbreviated injury scoring.

One of the key projects Tori is currently working on involves linking multiple data sources including police crash data, motor registration/licensing histories and infringements and hospital medical records data for crash involved drivers, riders and pedestrians.

The key impetus for initiating this project was to examine the impact of medical conditions in crash causation.

'However, a significant issue that is becoming apparent in this current work is the identification of a sub-group of drivers who consistently demonstrate higher than average traffic infringements, loss of licence and crash involvement. In many cases these drivers are also involved in other risky behaviours such as drink driving and driving under the influence of illicit drugs'.

'One of the key works undertaken by CASR has been the correlation between speed and crash risk is comparable to that of drink driving. Yet penalties for speed offences don't reflect the risk to public safety on our roads. I think that current demerit point penalties fall short of reflecting the seriousness of speeding to road safety'.

'Another major issue in road safety is the inexperience of young learner and provisional drivers. While steps have been taken in the right direction, such as an increase in driving practice hours for learner drivers, additional measures need to be taken to increase the exposure of this driving group before giving them their licence. Strategies could include further increasing the driving practice hours of learner drivers and increasing the age for receiving a provisional licence and introducing night time curfews and passenger restrictions during the initial licence holder period'.

'What is great about working at CASR is being involved with a group of researchers with a long history and commitment to investigating real crashes. This unique investigation provides an evidence based background to support the implementation of countermeasures'.

Medical conditions – do they contribute to crashes?

The extent to which medical conditions contribute to crash causation is not well understood. However, there are indications that they may play a significant role.

In 2008 CASR commenced a project to examine the extent to which medical conditions contributed to crash causation in a representative sample. The primary aim of this study is to determine the proportion of casualty crashes resulting in treatment or admission to hospital that can be associated with the effects of a medical condition or an acute medical event. The study involves examination of the medical records for all drivers, riders, pedestrians and cyclists involved in motor vehicle collisions on public roads in South Australia who present to the Royal Adelaide Hospital (RAH) over a three year period, between January 2008 and December 2010.

The medical records are matched with a number of other data sources including police reports on road accidents, licensing records from the SA Department of Motor Registrations and drug and alcohol screening records generated by the Forensic Science Centre of South Australia. This detailed examination of the circumstances surrounding each person's involvement in a crash enables identification of those crashes that are directly related to medical conditions, as opposed to those for which a crash participant's pre-existing medical conditions are unrelated.

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StreetSmart 2009 – Smarter Safer Drivers

On March 24th, Matthew Baldock took part in the Royal Automobile Association (RAA) StreetSmart event held at the Adelaide Entertainment Centre. This event involved the presentation of road safety information and messages to an audience of around 3,500 South Australian high school students. Matthew's presentation, on behalf of the SA Motor Accident Commission, featured demonstrations of the difference in stopping distance at different travel speeds, and emphasised the dangers of low level speeding.



Lessons from in-depth study – visual obstruction



Traffic management to address the problem ultimately has to involve limiting the amount of right turns allowed in the road network and in the case of traffic signals limiting the use of filter right turns. Restricting U-turns at breaks in medians to locations where storage lanes are present may also be beneficial.

In March Jeremy Woolley presented findings of the metropolitan in-depth study to a team of road safety and engineering professionals at the Department for Transport, Energy and Infrastructure. The forum was designed to raise the profile of road safety and provide an opportunity for the dissemination of information and discussion of road safety related issues with practitioners from all areas of the Department.

Jeremy pointed out that many crashes investigated involved drivers performing turning maneuvers colliding with unsighted

oncoming vehicles. These crashes occur at all types of junctions (with and without traffic control) and tend to be common for right turn manoeuvre. One typical crash scenario involves a vehicle attempting to complete a right turn from a multilane road having its view obstructed by an opposing turning vehicle, also waiting to turn right.

These types of crashes have been identified through CASR in-depth investigation but visual obstruction by other vehicles as a contributing factor is often not recorded in police crash reports. This makes the targeting of specific

locations by road engineers difficult and solutions need to be applied throughout the road network.

CASR presents regular seminars to DTEI in relation to findings from its in-depth crash investigations.

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Upcoming CASR seminars

The CASR seminar series will address major topics in the fight to reduce road trauma and highlight the latest research in the area.

12 June At-scene in-depth crash investigation
Sam Doecke (with members of the CASR crash investigation team)

24 July Managing traffic safety
Dr Jeremy Woolley

The seminars are held in The Art Gallery Auditorium on Fridays from 4.00pm to 5.30pm.

To confirm your attendance please contact
Leonie Witter on (08) 8303 4114 or email leonie@casr.adelaide.edu.au



New publications

Accidents to intoxicated pedestrians in South Australia (CASR061)

Evaluation of South Australian red light and speed cameras in South Australia (CASR011)

Vehicle speeds in South Australia 2007 (CASR051)

The effect of bull bars on head kinematics in pedestrian crashes (CASR059)

Evaluation of the Adelaide Hills speed limit change from 100km/h to 80km/h (CASR056)

An assessment of conspicuous traffic signals: mast arms (CASR042)

The full report series can be accessed at
<http://casr.adelaide.edu.au/publications/researchreports/>

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