



Heavy Vehicle Safety

Number 20, 2009

The emphasis in this bulletin is on the most recent research and best practice of heavy vehicle safety.

The bulletin is split into the following aspects:

- road safety (interaction with the road environment) & regulatory
- vehicle and fleet safety
- human factors

Road Safety (interaction with the road environment) & Regulatory

1. Crash compatibility between heavy goods vehicles and passenger cars: structural interaction analysis and in-depth accident analysis

Krusper A, Thomson R.

International Conference on Heavy Vehicles, 2008, Paris, France

International Symposium on Heavy Vehicle Transport Technologies, 10th, 2008, Paris, France

Pages 269-280

ISTE, London, United Kingdom

This Swedish study, which included 3D modelling work, concludes with recommendations for changes to the European regulations relating to front underrun protection.

2. Highway/heavy vehicle interaction: a synthesis of safety practice

U. S. Federal Motor Carrier Safety Administration

Publication No. FMCSA-MCRRR-07-007, 2007

Online [accessed 18 November 2009]. [Click here](#) to view

This literature review examines the safety interactions of commercial trucks and buses with highway features including roadside design and traffic control devices, and identifies countermeasures.

3. Improving road safety - heavy vehicles : Roads and Traffic Authority of NSW / 2009

Audit Office of New South Wales, Sydney, Australia

Online [accessed 25 November 2009]. [Click here](#) to view

This is the final report of an audit that aimed to assess how well the Roads and Traffic Authority in New South Wales, Australia managed on-road enforcement to reduce the number and severity of crashes involving heavy vehicles.

4. Relationship between road infrastructure characteristics and HGV accidents

Gothie M, Cerezo V, Conche F.

International Conference on Heavy Vehicles, 2008, Paris, France

International Symposium on Heavy Vehicle Transport Technologies, 10th, 2008, Paris, France

Pages 319-331

ISTE, London, United Kingdom

A paper from France reporting on the analysis of both data on road characteristics collected by an instrumented vehicle and of heavy vehicle crash data.

5. Safety assessment of goods vehicle traffic

Imanishi Y, Taniguchi E

Routes Roads, 2007

Volume 335, pages 34-47

This study analysed and compared data on goods vehicle accidents from a number of countries with respect to vehicle sizes in order to identify crash trends.

6. Safety benefits of improving interaction between heavy vehicles and the road system

Styles T, Mabbott N, Roberts, P, Tziotis, M.

Austrroads technical report ; AP-T119, 2008

Austrroads project no. ST1143.

Austrroads, Sydney, N.S.W.

Online [accessed 18 November 2009]. [Click here](#) to view

Crash data analysis, site inspections, a literature review and a stakeholder workshop were all undertaken as part of this study to identify the road related factors that contribute to heavy vehicle crashes on Australian and New Zealand freight routes.

7. Safety for the long haul : large truck crash risk, causation, & prevention

Knipling R.

2009

American Trucking Association, United States

Online [accessed 25 November 2009]. [Click here](#) to view details

Designed as a textbook on large truck safety issues, this publication includes discussion on crash risk, causation, countermeasures, safety management, and safety policy.

8. Speed compliance of heavy vehicles : final proposal and regulatory impact statement

2007

National Transport Commission, Australia

Online [accessed 25 November 2009]. [Click here](#) to view

This analysis of options to increase heavy vehicle speed compliance concluded with recommending the development of a chain of responsibility system.

9. Safety impacts of speed limiter device installations on commercial trucks and buses

Bishop R and others

Commercial Truck and Bus Safety Synthesis Program (CTBSSP) Synthesis, 2008

Transportation Research Board, United States

Online [accessed 18 November 2009]. [Click here](#) to view

This report examines the issues associated with speed limiters including measurable safety impacts, metrics, and degree of benefit.

Vehicle and Fleet Safety

10. Analysis of the safety benefits of heavy vehicle accreditation schemes

Austrroads research report ; AP-R319, 2008
Austrroads Project no. SS1057
Austrroads Publication no. AP-R319/08
Austrroads, Sydney, N.S.W.
Online [accessed 18 November 2009]. [Click here](#) to view

This report examines the extent to which accreditation is used by regulatory agencies as a means of improving heavy vehicle safety, and looks at a safe systems approach to agency and road transport industry interaction.

11. Best practice for use and design of truck mounted attenuators (TMA) for New Zealand roads

Goluchowski M.
Land Transport New Zealand research report, 301, 2006
Land Transport New Zealand, New Zealand
Online [accessed 25 November 2009]. [Click here](#) to view

This report incorporates the results of two studies carried out in actual driving conditions, and also includes a review of international research. It concludes with suggested changes to truck mounted attenuator operation in New Zealand.

12. Heavy vehicle safety in rural and remote areas

Tziotis, M, Pyta, V, McLean, J.
Austrroads technical report ; AP-T136, 2009
Austrroads project no. ST1193.
Austrroads, Sydney, N.S.W.
Online [accessed 18 November 2009]. [Click here](#) to view

This study examines heavy vehicle safety in rural and remote areas of Australia and New Zealand, identifying the road environment factors contributing to heavy vehicle crashes, and geometric design and traffic control measures to address them.

13. Improving fleet safety : guidance material for moving towards best practice

Haworth N, Greig K, Wishart D.
Prepared by the Centre for Accident Research and Road Safety – Queensland (CARRS-Q)
Austrroads research report ; AP-R320/08, 2008
Austrroads Project no. SS1026
Austrroads, Sydney, N.S.W.
Online [accessed 18 November 2009]. [Click here](#) to view

This document aims to be a guide to assist light and heavy vehicle fleets with fleet safety best practice. It is designed to accompany the Austrroads report AP-R321/08 [Improving fleet safety – current approaches and best practice guidelines](#).

14. The management and impact of abnormal loads

Report no. INS004, 2009
TRL, Crowthorne, UK

This report from the United Kingdom incorporates the results from several projects that have investigated the prevalence and congestion impact of large and heavy abnormal indivisible loads (ALLs) and the effect of mitigation measures.

15. The official New Zealand truck loading code : code of practice for the safety of loads on heavy vehicles

2008

NZ Transport Agency, New Zealand

This document aims to offer owners, drivers, operators and loading staff in New Zealand with guidance in the basic safety principles and precautionary measures required to ensure the safe carriage of a number of the more common types of load.

16. Safety benefits of stability control systems for tractor-semitrailers

Report no. DOT HS 811 205, 2009

Research performed by: Transportation Research Institute, The University of Michigan, USA

NHTSA, USA

Online [accessed 25 November 2009]. [Click here](#) to view

This report outlines the results of research into the performance of electronic stability control systems and roll stability control systems for heavy-truck tractor-semitrailers, using the analysis of crash datasets.

Human Factors

17. An evaluation of emerging driver fatigue detection measures and technologies

Barr L, Popkin S, Howarth H

Final Report FMCSA-RRR-09-005, 2009

Federal Motor Carrier Safety Administration, Washington DC, USA

Online [accessed 18 November 2009]. [Click here](#) to view

This study focuses on recent developments in mathematical models and vehicle-based operator alertness monitoring technologies.

18. The impact of mental health symptoms on heavy goods vehicle drivers' performance

Hilton MF, Sheridan J, Whiteford, HA

Accident Analysis and Prevention, 2009

Volume 41, Number 2, pages 453-461

A study of 1324 HGV drivers used various mental health scales and questionnaires. Severe depression (3.3 % of drivers) was associated with higher risk factors for accident involvement, equivalent to having a blood alcohol reading of 0.08%.

19. Improving safety management in Australia's bus industry discussion paper

2008

National Transport Commission (NTC), Victoria, Australia.

Online [accessed 25 November 2009]. [Click here](#) to view

This report discusses regulatory best practice and suggests some alternatives for bus operator accreditation and licensing, based on a risk management approach.

20. The relationship between driver fatigue and rules limiting hours of driving and work

Parkes AM, Gillan W, Cynk S (editors)

Published Project Report no.413, 2009

TRL, Crowthorne, UK

This report includes a review of drivers' hours rules in the UK within the context of relevant scientific literature, an analysis of crash data and international comparison of current legislation and practice.

21. Remuneration and safety in the Australian heavy vehicle industry: A review undertaken for the National Transport Commission.

Quinlan M, Wright L.

2008

Report prepared for the National Transport Commission,
Melbourne, Australia

Online [accessed 25 November 2009]. [Click here](#) to view

Identifies the means by which Commonwealth legislative systems applying (or to apply) to employees and independent contractors could/should accommodate a system of 'safe payments' for employees and owner-drivers. Investigates any links between driver remuneration and payment methods.

22. Tasmanian heavy vehicle safety code

2008

Department of Infrastructure, Energy and Resources, Tasmania, Australia

Online [accessed 25 November 2009]. Click [here](#) to view

This Code provides guidance on what systems or frameworks can be put in place to improve business processes which impact on road safety in the heavy vehicle industry.

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