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April 2011

Reports Published – April 2011

REPORTS

INS009 The characteristics of pedestrian road traffic accidents and the resulting injuries by R E Cookson, D C Richards and R W Cuerden
(Price £97.50)

PUBLISHED PROJECT REPORTS

PPR565 Effect of vehicle defects in road accidents by R W Cuerden,
M J Edwards and M B Pittman
(Price £40, code 4X)

PPR459 Proposed precautionary spread rates for the Highways Agency's road
network by R W Jordan and M G Evans
(Price £35, code 3X)

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(A selection of abstracts added to the TRL Library Database during a specified period)

CT68.5 Deterioration of road surfaces – update (2008–2010)
(Price £30)

CT23.4 Electric and hybrid vehicles – update (2008–2010)
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Summary**April 2011****Insight Report INS009**

The characteristics of pedestrian road traffic accidents and the resulting injuries

R E Cookson, D C Richards, R W Cuerden

Pages: 56, ISBN: 978-1-84608-908-4

This Insight Report explores the characteristics of pedestrian road traffic accidents, and the injuries received by the pedestrian casualties. These are often the most vulnerable members of society, so an understanding of the causes and consequences of pedestrian accidents is important as the demographics of the population changes in the coming years. Recent changes in vehicle design, including the recent legislation on pedestrian protection, may also affect the consequences of pedestrian accidents.

This report has used a number of different sources of information. These include medical data collected by all hospitals in England (the Hospital Episode Statistics) and more in-depth data collected by the Helicopter Emergency Medical Service, which operates from the Royal London Hospital. More traditional sources of accident data have also been used, including the national police STATS19 database, in-depth accident studies (On The Spot and the Co-operative Crash Injury Study) and police fatal file reports.

This Insight Report provides a snapshot of the causes and consequences of pedestrian traffic accidents, which shows the most important considerations for reducing pedestrian casualties. Continuous monitoring is required to determine the results of changing vehicle design and pedestrian demographics.

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Summary**April 2011****Published Project Report PPR565**

Effect of vehicle defects in road accidents

R W Cuerden, M J Edwards, M B Pittman

Pages: 108, ISBN: 978-1-84806-951-0

All vehicles deteriorate in service and this can have an adverse impact upon safety and the environment. Roadworthiness testing exists to ensure that at least a minimum level of benefits in a vehicle's original design and manufacture are retained in service. This study provides a high level overview of the likely impacts (if any) to road safety from changes to the MOT test frequency by vehicle age and time since last inspection. Two different theoretical models were developed and used to provide an estimate of the magnitude of the number of accidents and casualties which may occur annually due to less frequent MOT testing. Reducing the frequency of testing for newer vehicles will have adverse road safety consequences, but these would be substantially greater for older vehicles as the data presented in this report already indicates their high MOT failure rates. Although the theoretical models are not ideal, largely due to a lack of data upon which assumptions have been based, they consistently indicated an increase in accidents and casualties. However, it must be stressed that these are estimates only and further work would be required before a genuine quantification of the scale of these adverse road safety impacts will be known.

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Summary**April 2011****Published Project Report PPR459**

Proposed precautionary spread rates for the Highways Agency's road network

R W Jordan and M G Evans

Pages: 92, ISBN: 978-1-84608-948-0

Spread rates for precautionary treatments with dry and pre-wetted salt were proposed for the Highways Agency's road network. A literature review was carried out to determine (i) the spread rates used for the precautionary salting of roads in Europe and (ii) the factors that need to be taken into account when determining rates. Road trials were carried out on the M62 and M180 to determine the effect of trafficking on residual salt levels after spreading dry untreated salt, dry treated salt and pre-wetted salt. The effect of trafficking on water film thicknesses was determined in road trials and from a literature review. The proposed spread rates were calculated using the sodium chloride - water phase diagram to determine the freezing point temperature of the brine formed from the salt and water assumed to be present at road surfaces after trafficking. Lower spread rates were calculated for heavily trafficked areas than for lightly trafficked areas because of the different salt losses and water film thicknesses assumed. The proposed rates compare favourably with those used elsewhere in Europe at road surface temperatures not less than -4°C , but they tend to be higher at lower temperatures. Further guidance was recommended for inclusion in the Network Management Manual.

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Current Topics in Transport Alert

Current Topics Published – April 2011

CT68.5 Deterioration of road surfaces – update (2008–2010)

This issue of Current Topics includes over 40 abstracts of reports, conference papers, books and journal articles which focus on the manifestations, causes and treatment of cracking, rutting and pothole formation in rigid and flexible pavements. Abstracts are included on the monitoring and modelling of pavement deterioration and its treatment by methods such as overlay surfacing, crack sealing and patching.

Price £30

CT23.4 Electric and hybrid vehicles – update (2008–2010)

This issue of Current Topics includes over 45 abstracts of reports, conference papers, books and journal articles which focus on international developments in the technology of electric and hybrid cars, with an emphasis on plug-in hybrid electric cars. Subjects covered include the various possibilities for generating electrical power, power storage technology, energy source management, comparisons of electrical power with other alternative fuels, reductions on fuel consumption and emissions from the adoption of electric and hybrid cars, and the market for these vehicles.

Price £30

CT29.7 Electronic route guidance – update (2008-2010)

This issue of Current Topics includes over 45 abstracts of reports, conference papers, books and journal articles which focus on aspects of electronic route guidance for drivers. The subjects covered include traffic control, navigation systems, testing of user interfaces / visual displays, risk averse route selection, emergency evacuation systems and route guidance system technology.

Price £30

Current Topics titles are published in four main themes: Transport Planning & Environment; Electronics & Communications in Transport; Civil Engineering, and Transport Safety. Each title includes abstracts of reports, conference papers, standards, books and journal articles, selected from TRL's Library Database during the years shown. Much of the English language literature from the UK, USA, Australia and Europe is included.

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