

## **First International Conference on Road Safety at Work 2009 Poster Presentation Abstracts**

### **Reducing Traffic Speed within Open Road Work Sites Using Obtrusive Perceptual Countermeasures**

**Jesse A. Allpress, Louis S. Leland, Jr.**

**University of Otago, New Zealand**

Excessive speed is currently the primary contributory factor in traffic accidents within New Zealand roadwork sites. The present study evaluated two novel interventions designed to control traffic speed within a roadwork site where drivers were required to decrease their speed from 100km/h to 50km/h. Drivers were required to pass through a passage of either evenly or decreasingly spaced cones. A multi-element baseline design was utilised. Both interventions were highly effective at reducing vehicle speed, with the greatest initial decrease in speed to 9.46km/h below Baseline for the Uneven arrangement. Both arrangements more than halved the proportion of 'dangerous' speeders travelling faster than 20km/h over the speed limit. It was concluded that either arrangement is likely to significantly, conveniently and cost effectively reduce the number of speed-related accidents within roadwork zones. The findings are discussed in relation to the perceptual mechanisms by which transverse and peripheral stimuli influence speed perception and driver behaviour.

Behaviour Analysis is a way of formulating and testing solutions to workplace challenges. Speeding was causing danger to workers and destruction to vulnerable roadworks in progress. Using a combination of 'single subject' multi-element baseline design and scientific knowledge of perception we tested two cost effective solutions to such a challenge.

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### **Hazards of the Highways: A Behavior-based Safety Intervention for New Zealand Truck Drivers**

**Rebecca Everdon**

**University of Otago, New Zealand**

Trucking is a hazardous profession and drivers are particularly at risk, given their lone-worker status. Building upon driver input, we have designed a behavior-based safety intervention for New Zealand truck drivers. We expect this ongoing research to demonstrate an increase in safer driver behaviors ultimately resulting in fewer crashes, reduced injuries, and a decrease in social costs and in compensation expenses for the New Zealand government.

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### **Avoiding Equipment-related Injuries in Work Zones**

**Jennifer Beaupre**

**National Institute for Occupational Safety and Health, United States**

Between 1992 and 1998, the Census of Fatal Occupational Injuries (CFOI) reported 841 fatalities in the highway and street construction industry. The majority of fatalities occurred in work zones, with 95% involving vehicles and equipment, 38% of these fatalities involved a worker on foot being struck by a vehicle or equipment. The objective of this study is to evaluate the efficacy of proximity warning systems (PWS) and internal traffic control plans (ITCP) in reducing worker on foot exposure to vehicles and equipment at asphalt paving operations.

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**Drive Safely, Your Family Needs You**  
**Emmanuel Ansah**  
**AngloGold Ashanti Ltd., Ghana**

A scenario of two drivers who work for a company

Picture 1 depicts an unsafe driver who thinks taking alcohol before driving makes him alert behind the wheel. Because he was under the influence of alcohol, he takes off without doing any prestart inspection and hits the road speeding unnecessarily. He is involved in an accident, dies, and leaves his family stranded. The picture shows his family mourning at the scene of the accident

Picture 2 depicts a driver who has a positive attitude toward safety and his work. He does a prestart inspection before setting off. He drives within the speed limits, taking into account the road and weather conditions. He arrives home to a joyous welcome from his family.

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**Emerging Markets in Road Safety Policies: Insurance Policies for Road Users in Developing Countries**  
**Tomukum Chia, Numfor Jackson, and Remigius Funwie**  
**Global Centre for Compliance, Hazards and Disaster Management, Office of Disaster Preparedness, Outer Space Application and Emergency Response, GLOCECOHADIM, Cameroon**

Road accidents constitute major threats and are quite intimidating in the developing countries and remain one of the uncertainties and tragedies confronting mankind. The magnitude and trend worldwide is no better. Man has become a driver of change through civilization and progress but the change is affecting mankind negatively. Regulations, policies and accidents including car theft situation has created a favorable situation for navigation, telemetric services, car tracking systems for security, traffic congestion and road safety. There are gaps in road safety research and hindrances. Management in road traffic accidents is another problem.

The paper seeks to examine the scope of road accidents by analyzing the situation of road safety and insurance policies in Central and West Africa with the case and practice in Cameroon and Nigeria. It would involve the role of decision makers, road users, technical advises, evaluation, engineering services, construction, management, inspection, repairs, emergency clearance of debris for reconnaissance of the damage areas and passage of emergency personnel and supplies. Focus would be on heavy duty vehicles. The concepts of operation involves SSA to provide public work and support that will assist emerging markets in road safety policies and insurance in life saving and life protecting support needs prior to, during and immediately after a major accident. Recent road accidents have demonstrated that good progress is made in saving lives and reducing injuries because of good safety policies and planning. However, the economic and financial risk reduction has been less than desirable.

There is an urgent need for a more dynamic and integrating insurance policies for all road users. The magnitude and trends is heart-breaking and has continued to outstrip all efforts and standard policies to curtail it. Planning is essential for road safety strategy and involves coordination, funding, crash data system, traffic law enforcement and road safety engineering. The components of road safety planning are based on target and performance indicators. Initially two concepts are practice: the Vulture and Eagle concepts-One is proactive allowing for appropriate forecasting and use of space application whereas the other is not.

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## **Road Traffic Safety: A Big Challenge in the Developing World A Uganda (East Africa) Case Study**

**Ronald Ssebunya**

**National Road Safety Concern, Uganda**

Africa's road fatality share is three times as large as its motor vehicle share. The road fatality toll has grown by over a quarter in most African countries over the past seven years. Efforts to prioritize road safety by African governments have to be stepped up.

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## **The Health and Safety of Transport Workers in the European Union**

**Sarah Cosey, Elke Schneider, Xabier Irastorza, Véronique de Broeck, Marthe Verjans**

**European Agency for Safety and Health at Work (EU-OSHA)**

Our poster presents first findings from the EU-OSHA risk observatory regarding conditions of work and exposures of transport workers to hazards and their health outcomes. Also included are details of on-going projects to collect and disseminate examples of good practice to prevent risks to workers in the road transport sector, from both intermediate and workplace levels.

Note: The complementary poster presentation of Seppo Olkkonen, Finnish Institute of Occupational Health, will present some examples from Finland of the above-mentioned good practice.

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## **Successful OSH and Safety Interventions of Road Haulage Drivers in Transport Companies\***

**Paula Kärmeniemi, Jari Stengård, Seppo Olkkonen, Riia-Liisa Pulkkinen, and Aira Ylä-Outinen**

**The Finnish Institute of Occupational Health**

The Finnish system aims to create collaboration between employers and occupational health service providers or other experts in order to promote the health, safety, and well-being of employees. We briefly present the Finnish Occupational Health Care System and give three examples of good practice in its implementation in middle-sized transport companies: (1) A Driver's Manual, delivered to all company drivers, (2) an Operational Online Management System and (3) a Faultless Condition for Truck Drivers Project.

\*The intervention cases include the TCWE WP 2008 Good Safety and Health in Road Transport Sector Program, to be published later in 2009 [http://fi.osha.europa.eu/good\\_practice](http://fi.osha.europa.eu/good_practice)

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## **Traffic Deaths at Work in Finland 2001-2005**

**Seppo Olkkonen, Simo Salminen, Paula Kärmeniemi**

**Finnish Institute of Occupational Health**

**Esa Rätty**

**Traffic Safety Committee of Insurance Companies, Finland**

Our poster presents a review of the national statistics and analysis concerning fatal traffic accidents among professional drivers and work-related traffic accidents. Traffic is a significant cause of accidental deaths at work: work-related road crashes caused 28.5% of traffic deaths in Finland in 2001-2005. We describe the risk factors of these accidents and the interventions for improving companies' personnel traffic safety.

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**Safe and Healthy Professional Drivers-Recommendations for Occupational Health Care Services**  
**Aira Ylä-Outinen, Paula Kärmeniemi, Jaana Laitinen, Jari Latvala, Seppo Olkkonen and Markku Saino, The Finnish Institute of Occupational Health**

We present the new content and model of the occupational health care guide prepared by FIOH in 2007-2008 for professional drivers' occupational health care units. Attention should be paid to the first, however slight, signs of cardiovascular disease risk factors, as well as alertness and sleep disorders, as these demand early intervention. Improving the lifestyle of professional drivers involves addressing issues such as exercise, smoking, healthy meals, alcohol consumption, and sleep debt.

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**Prevalence of Non-Standard Safety Helmet Use among Food Delivery Workers in Malaysia**  
**Kulanthayan K.C. Mani**  
**University Putra Malaysia, Malaysia**

In Malaysia, nearly 50% of all vehicles on road are motorcycles. In 2007, Police reported 6282 traffic fatalities and 51% of them were motorcyclists. 65% of reported serious injuries were related to head injuries. This study aims to determine factors influencing the use of standard or non-standard helmets among food delivery workers.

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**Evaluating the Effectiveness of Guidance on the Management of Work-related Road Risk-an Initiative by Great Britain's Department for Transport**  
**Britta Lang**  
**Transport Research Laboratory, United Kingdom**

The poster summarizes the development and evaluation of the Work-Related Road Safety (WRRS) CD-ROM, a guidance resource aimed at managers with responsibilities for staff driving for work.

Qualitative and quantitative data collected across all hierarchy levels of the participating 37 public and private sector organizations in a pre-/post longitudinal design indicated improvements in WRRS-related policies, greater awareness for WRRS in managers and drivers and some safer driving-related attitudes and behaviors at trial end. Lack of support from senior management, lack of resources and of dedicated staff were cited most frequently as reasons for the lack of improvement in management systems and safety culture.

Recommendations resulting from the trial comprise the inclusion of work-related road accidents in the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) and the development of targeted communication programs for small private and large public sector organizations to encourage further adoption of good practice.

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**Increasing Road Worker Safety in The Netherlands**  
**Anita Venema**  
**TNO Work and Employment, The Netherlands**  
**Berend Brinkhuis**  
**Van den Berg Infrastructures, The Netherlands**

During 2006 and 2007, a study was performed in The Netherlands in order to better understand the crash risk for road construction workers during road works. The study aimed both at the magnitude of the problem and at clarification of accident causation. An accident model was developed during the study, accident data were studied, and road workers were questioned and observed during actual road works. Results and conclusion will be presented as well as some preventive actions that were taken after the study.

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**Road Safety at Work Data in The Netherlands**  
**Anita Venema and Maartje Bakhuis Roozeboom**  
**TNO Work and Employment, The Netherlands**

A description is given on available databases in The Netherlands with regard to traffic-related work accidents and injuries. Traffic-related work accidents are not always fully included in these databases, depending on whether it was known that the victim was working at the time of the accident. An overview is given of the characteristics of the worker and the work involved in traffic-related accidents. The most important risk factors for traffic-related work accidents are presented.

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**Using Crash Outcomes Data Evaluation System (CODES) to Analyze Work-related Motor Vehicle Crashes**  
**Steven M. Thygeson**  
**Brigham Young University, United States**

This poster will present current research conducted using probabilistic record linkage databases. The Crash Outcomes Data Evaluation System (CODES) has not only demonstrated the feasibility of probabilistic record linkage using large, statewide databases, but also quantified the risk of not wearing a seatbelt as it pertains to being treated by emergency medical services, treated at the emergency department, admitted to a hospital, and killed as a result of a motor vehicle crash.

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**A Review of Fatigue Risk Management Systems and their potential for managing fatigue within the UK Road Transport Industry**  
**Carina Fourie, Alexandra Holmes, and Paul Jackson**  
**Clockwork Research Ltd**

In 2008, the UK Department for Transport (DfT) commissioned an international study to explore researchers', operators' and regulators' experiences of Fatigue Risk Management Systems (FRMS) in the transportation industry. The research consisted of a literature review, a survey and in-depth interviews with individuals and organisations with experience of FRMS. Overall, the research concluded that FRMS, as an addition to prescriptive limits on driving and work hours, has the potential to meaningfully enhance protection against fatigue risk in road transport. The reported advantages of FRMS included enhanced safety, increased operational flexibility and increased awareness of fatigue as a source of impairment. Among the reported problems associated with FRMS were a lack of guidance material provided by the regulator and the challenge of moving from a prescriptive to an outcomes-based approach. Of note, several regulators and researchers from Australia commented that the recent introduction of chain of responsibility legislation, which extends the liability for driver fatigue and other offences up the supply chain, will be integral to effective fatigue management in their country. Initial consultations with UK road transport operators and unions found support for FRMS, with some operators volunteering to be involved in future FRMS research. The final report provided a number of recommendations, including initiating research on FRMS in the UK. Consequently, in 2009 a sample of road transport operators will be invited to trial FRMS and an objective assessment of the benefits and disadvantages for safety and productivity will be undertaken.