Reducing Risk In Workplace Vehicles

Quayle, D. J., Forder, L. E.
FleetSafe Pty Ltd
email: louisef@fleetsafe.com.au

Introduction

The Australian Safety and Compensation Council workers' compensation statistics indicate that vehicle accidents remained the most common cause of injury for the 2004-05 year, accounting for forty-one percent of all compensated fatalities [1]. In 2003-04 vehicle accidents made up thirty-five percent of claims and thirty-four percent in 2002-03, indicating that workers' compensations claims from vehicle accidents are increasing [2]. In addition, although the national road toll has been steadily decreasing since 2000, work related road fatalities have remained at the same level since 2002 and the number of heavy vehicle fatalities has been steadily increasing [3].

Work related road safety is an issue that needs urgent improvement. While many organisations are committed to maintaining the health and safety of employees within their workplace, risk management currently fails to include safety while on the road [4]. Current research suggests that the level of commitment from management is strongly related to fleet safety and work-related driver behaviour within organisations [5]. Fleet Managers are fundamentally concerned with the logistics and economics of fleets so it is not surprising that fleet safety is often thought about only in terms of vehicles [3].

Vehicle safety technologies are increasingly available as safety regulations become more stringent. These solutions, utilising technologies such as RFID, Bluetooth, GPS, wireless CCTV and video, directly reduce risk, increase efficiency and productivity, and often result in significant cost reductions. Of equal importance are behavioural factors. Research indicates that for every three hundred risky driving behaviours', there are twenty-nine minor injuries and one major injury or fatality [6]. Furthermore, drivers who have had one accident in the past have a fifty-six percent greater chance of being involved in a future accident [7].

To investigate the effectiveness of exception-based monitoring technology on driver behaviour, we will look at a trial conducted by T-Mobile, a UK based mobile phone service and data provider.

Methods

Prior to the study, T-Mobile had experienced a high work-related vehicle collision rate. Due to the company's escalating claims record insurance premiums doubled from 2001 to 2002 to over AUD 2.1 million. In response, T-Mobile established a 'traditional' one-to-one on-the-road driver training program that included an annual refresher course and completion of an e-learning risk module. By 2005 the company's incident rate had dropped by fifty-five per cent compared to 2001 figures. However, the rate of crash reduction had slowed down and by 2005 it had reached a plateau. During 2005, twenty vehicles were equipped with the driver behaviour monitoring technology, Greenroad. T-mobile deemed this initial trial a success and in 2006 two hundred and fifty vehicles were fitted with Greenroad for a twelve month trial period. A cross-section of vehicles were selected for the trial including those driven by 'high risk' field-based engineers working in rural areas, as well as some management cars including those driven by the health and safety management team. The decision to include corporate management vehicles in the trial stemmed from the company's philosophy to 'lead by example'.

Greenroad combines in-vehicle technology with integrated web applications. It continuously rates driving skills and safety levels, trains drivers in real time by providing feedback as they drive, and helps maintain the changes in behaviour through continuous reinforcement. The in-vehicle technology consists of sensors installed in the vehicle that collect information that monitor and analyse 120 driver behaviours including braking, accelerating, lane handling, passing, cornering, swerving, speeding and turning. The data is sent in a continuous stream to a web server. It is analysed to provide almost instant information about a drivers' safety performance. Immediate feedback is given to the driver using a dashboard mounted green, yellow and red LED device which alerts the driver about their current and ongoing safety status. Drivers are also encouraged to log on to their individual website every week to analyse reports on their own driving.

T-Mobile supported the technology with an incentive points-based program called 'Safety Stars'. The program enabled employees to collect company funded gift vouchers as a reward for maintaining low numbers of 'unsafe manoeuvres'. 'Unsafe manoeuvres' are defined as incidences such as sharp braking and speeding as determined by the Greenroad data analysis. The Greenroad system was incorporated into T-Mobile's extensive occupational safe driving policy that also limits the use of hands-free mobile phone use to emergency use only and requires annual driver license reviews and training.

Results and discussion

The twelve month trial period saw the crash rate drop by twenty per cent compared to the twelve month period prior to the study and a forty nine per cent reduction in vehicle repair costs over the same period. During the trial, the company recorded an AUD 830,000 saving in bent metal costs and fuel savings of around AUD 39,000 which represented a 3 per cent reduction in fuel costs. During the first three months of the trial period, the device was recording an average of eighty-one unsafe manoeuvres for every 10 hours of driving. The remainder of the trial period saw this rate drop to an average of forty-one unsafe manoeuvres for every 10 hours of driving.

As the study was conducted internally by T-Mobile, there are some limitations on the structure of the evaluation and the data produced. These limitations include lack of detailed data such as the number of 'unsafe manoeuvres' generated and failure to use control groups. Generally, many organisations are reluctant to reveal data regarding collision

rates, claims and risky driving events. This means that the success of these technologies must rely mostly on anecdotal evidence and generalised data gathered and released by organisations using the system. In addition, if companies that operate fleets are unwilling to acknowledge that risky driving is an issue that needs to be addressed, it increases the scope for unsafe driving behaviours' to be perpetuated.

Conclusions

Companies that operate fleets have little visibility into their drivers' behaviour on the road. While some organisations have appreciated the relevance of monitoring driver performance for many years, the increased demand for drivers and higher levels of regulation within the industry means operators must look to new technologies and services to assist in the management of the risk associated with driving.

A proactive approach to driver and road safety must take into account the significant impact of driver behaviour. Exception-based monitoring technologies such as Greenroad directly result in improved safe driving behaviours', mitigate risk by lowering the number of near miss and collision events, protects drivers and reduce associated costs. However, the level of success of these systems lies in the approach of management when implementing the system. Internal policies must be developed and actively implemented that focus on engaging drivers in proactively supporting and advocating safety in the workplace. The success of safety initiatives is directly related to the level of ownership of safety management tasks by employees in safety critical positions [4]. For operators to create realistic improvements in safety within their organisations, a shift is needed to a holistic approach that includes addressing driver risk.

There are many new road safety technologies entering the market. Careful selection of such technologies combined with proactive implementation and management support, reduces risks associated with workplace vehicles and establishes a holistic safety framework that creates sustainable safety cultures within businesses.

References

1. Australian Safety and Compensation Council, *Compendium of Workers' Compensation Statistics Australia 2004–05*, 2007.
2. Australian Safety and Compensation Council, *Compendium of Workers' Compensation Statistics Australia 2002–03*, 2006.
3. Wills AR, *Fleet Safety, The Road From Research To Practice*, 2007.
4. Banks T et al. *Safety Ownership in the Australian Workplace and Its Application to Road Safety*, 2007.
5. Wills AR et al. *Journal of Safety Research*, 37: 375-383 2006.
6. Heinrich HW et al. *Industrial Accident Prevention*, 1980.