

CORPORATE INITIATIVES TO IMPROVE ROAD SAFETY AND THE ASSOCIATED PRODUCTIVITY AND ENVIRONMENTAL BENEFITS

Manager, Strategic Policy and Corporate Safety, at the National Transport Commission.

Senior Policy Analyst – Corporate Safety Project at the National Transport Commission.

Project Director – Corporate Safety and Rail Reform at the Australian National Transport Commission

J CARSLAKE
National Transport
Commission
Australia

J CURETON
National Transport
Commission
Australia

J POTTER
National Transport
Commission
Australia

Abstract

The number of deaths and serious injuries on Australian roads has fallen significantly over the past 30 years. This reduction has largely been attributed to changes in behaviour resulting from community education, government enforcement and regulation, as well as improvements in vehicle standards and road upgrades. Work-related road crashes in Australia account about half of all occupational fatalities and 15 per cent of national road deaths. Decisions taken by industry improve road safety both by changes to their own operations and by influencing the behaviour of others. This paper identifies actions that have been taken by individual company or group of companies (in an industry sector or along a supply chain) and their impact on safety and productivity and the environment through a case study approach. The case studies demonstrate that companies which are implementing road safety initiatives do not perceive this as a cost but as good business.

Keywords: Heavy Vehicles, Freight Transport, Road Safety, Case Study, Corporate Initiatives, Efficiency, Cost Benefit, National Transport Commission, Freight Transport.

1. Introduction

The number of deaths and serious injuries on Australian roads has fallen significantly over the past 30 years, despite substantial increases in population and the number of registered vehicles on the road. This reduction has largely been attributed to changes in behaviour resulting from community education, government enforcement and regulation, as well as improvements in vehicle standards and road upgrades. Australian governments – federal, state and local road authorities – have introduced a range of targeted road safety initiatives to reduce road deaths. These initiatives included the mandatory fitting of seat belts in new vehicles, random breath testing and the introduction of camera-based speed enforcement. All have contributed to this continuing decline.

The corporate sector – including transport operators, transport users and other businesses that rely on road transport – can have a major influence on the safe operation of the road transport network. Work-related road crashes in Australia account about half of all occupational fatalities and 15 per cent of national road deaths, and many people are killed or seriously injured while travelling to and from work (ATC, 2011). Decisions taken by industry – as well as individual corporate safety cultures – affect how employees, customers and suppliers use the road network. They must be encouraged to take the responsibility for ensuring their decisions contribute to improving road safety as part of a shared responsibility for road safety. It is recognised that the continuing and central role for government in providing the physical and regulatory environment in which road transport takes place. However, it also frames the potential for the corporate sector to help improve the overall safety of the road network as both an organisational and community benefit.

This has two aspects – the potential to influence the behaviour of others (customers, suppliers, business partners) and the adoption of measures to improve safety within their own organisations.

1.1 Corporate involvement in road safety

Corporate involvement in road safety is being harnessed internationally by a variety of means, such as the European Transport Safety Council's PRAISE program. This program covers all safety aspects of driving 'at' work and driving 'to' work. It aims to recognise best practices to assist employers secure high road safety standards for their employees. In particular, it promotes the value of work-related Road Safety Management with the intent of raising the work-related road safety standards of EU Member States. Other approaches include the European Charter for Road Safety, which has been developed as a European Commission initiative to engage companies in road safety. It provides member organisations, who must commit to ten principles that link strongly to good corporate social responsibility, with the opportunity to share and learn from ideas and practices to improve road safety in Europe.

More broadly, an international standard – ISO 39001 "Road Traffic Safety Management" is nearing finalisation to provide a standard for management systems for road traffic safety. The implementation of the standard should provide organisations that interact with the road transport system the opportunity to improve safety associated with the transport demand created by their operation.

The work described in this paper was undertaken in the context of a broader project assessing whether such schemes could contribute to improved road safety outcomes in Australia.

1.2 Corporate safety investigation

A literature review undertaken at the commencement of this work (Mooren et al., 2011) identified the elements of existing safety schemes that could relate to advancing Safe System approaches to road safety through the actions of industry. It also examined safety management practices more generally to explore the feasibility of applying these practices in the Australian corporate context. It found a number of consistent elements of safety management that are associated with good safety performance. These findings formed the basis for a discussion paper released in June 2011 (NTC, 2011).

Extensive national consultation was then undertaken to identify the willingness and scope for corporate activities to improve road safety, and to identify organisations which already had schemes in place which provided demonstrable benefits to their organisation. This covered two types of scheme – those with the potential to influence the behaviour of others (customers, suppliers, business partners) and those that involved the adoption of measures to improve safety within their own organisation.

Interviews were undertaken with companies identified through the consultation process, focussing on the reasons that lead the company to adopt specific measures to improve road safety, and on the impacts that those measures had had on the company's operations. Areas of particular interest included impacts on efficiency, productivity, profitability, environmental performance, and, of course, the effects on road safety.

This paper describes actions that have been taken by an individual company or group of companies (in an industry sector or along a supply chain) and the extent such initiatives have improved road safety and benefited the businesses involved. It also discusses the opportunity for knowledge transfers within industry sectors and the implications of such initiatives to the wider community.

2. Case Studies

This paper is focused on five organisations that either operate heavy vehicles, or for whom heavy road transport is central to their business operations.

Three companies, a freight forwarding service specialising in supermarket supply (Company A), a tanker operator carrying milk, chemicals and dangerous goods (Company B) and an interstate line haul operator (Company C) are heavy vehicle companies for whom their core business is freight transport. The other two companies were a steel manufacturer (Company D) and a concrete/construction materials manufacturer (Company E) respectively, for whom a large part of their core business relies on transporting these materials by road.

A common attribute of the companies examined to date is their willingness to share information and collaborate with like-minded organisations. Company B, for example, stressed that 'there is no trademark on safety'. Company A noted that one of the biggest challenges they faced when beginning their road safety journey was a lack of examples for them to model themselves on – they had to start from scratch.

Each of the case studies discussed in this paper was chosen to highlight particular aspects and strengths of the approach used in particular organisations.

2.1 Case Study A: Fostering a ‘safety culture’ is paramount and must be supported from the top

‘Scrutiny does come at a cost; the benefit is that observance influences all other areas of the business.’

Company A is a small family company that performs supermarket and retail distribution within metropolitan & regional areas. Company A’s fleet contains approximately 50 vehicles including prime movers, rigid trucks, trailers and dollies and training vehicles. As well as freight transport, the company also runs a training arm which delivers driver training for clients in a number of heavy vehicle and rigid competencies.

Close consideration of the operational issues confronting their drivers were the initial source of the company’s safety initiatives, but it was central to their successful implementation that initiatives were driven from the highest levels of management. Company A recognises that learnings from its training arm that had subsequent flow on safety of the freight forwarding operations of the company. The company also notes that one of its initial challenges was the lack of examples from which it could model its safety program highlighting the benefits that can come from the sharing of information and good practice.

Specific actions undertaken beyond the specific legal obligations included introducing a requirement for journey plans, for drivers to keep a diary of events that affect the safety and operational success of their journey. This is particularly significant for remote area work,

Where the delivery involves more than a single day’s travel, both the driver and the customer are briefed & provided a base trip plan before departure, which the driver can vary to deal with delays or local issues if necessary. Costing of remote area deliveries includes an allowance for such delays to ensure that time pressures do not lead to unsafe driving practices.

Audits are undertaken to confirm compliance, with the auditors required to confirm that drivers are not pressured into making unreasonable trip deadlines. Company A also engages the services of accredited driving instructors to regularly assess each driver (including subcontractors). This includes on road video surveillance and the observation of loading and unloading on customers’ premises.

Due to its extensive internal measures, as well as Company A has been able, in recent years, to demonstrate significant inroads in safety, particularly around fatigue and crash data.

Improvements for Company A in the area of fatigue management have resulted in the number of breaches falling from 105 in 2009 to 39 in the 2011, with only 2 fatigue breaches recorded to mid-2012. The number of crashes involving the company’s vehicles has also fallen by 15% from 2009 to 2011.

Although this level of scrutiny does impose an additional cost to the business, the benefit is that observance influences all other areas of operations, and contributes to an overall reduction of crash related cost, and a now well-established culture of safety and compliance.

2.2 Case Study B: Improving road safety has bottom line pay-offs

'Investing in OH&S can have financial paybacks'

Company B is large independent milk, chemical and dangerous goods transport carrier. It provides logistics and carrier services around Australia employing approximately 600 drivers.

Company B began their safety journey after a particularly bad 'run' of safety outcomes, including multiple vehicle rollovers. Prior to embarking on the safety overhaul, this company was averaging one heavy vehicle rollover per month.

A decision was taken at chief executive level to change the safety culture. New managers were employed and empowered to implement initiatives to change the existing culture to one that gave first priority to safety. The safety initiatives included overhauling a number of pre-existing practices, including modifying the timing and method of drug and alcohol testing, 'on the spot' driver license checks, detailed analysis of drivers work diaries and a review of the types of work undertaken by the company. In-vehicle monitoring to provide managers with immediate alerts of serious over-speed incidents or breaches of driving hours were introduced and have contributed to developing a culture in which unsafe behaviour is not tolerated.

Company B also identified business segments that were resistant to change. Following discussions with their insurers on risk profile and mitigation issues, one of these business segments was sold rather than continuing to operate it and carrying the risk.

One recent initiative is the purchase of a driving simulator to provide drivers with the chance to recognise and learn to deal with difficult situations such as a steering tyre blowout or brake failure. The company has stated that drivers who have used the simulator have outlined the safety benefits, including feeling better prepared and able to handle adverse road conditions and situations they may encounter.

The outcome of these initiatives has been to deliver significant safety and productivity benefits. The cost of compulsory workplace insurance claims has fallen from over \$1.6 million in 2009, to below \$100,000 in 2011. Operating crash costs have also decreased from around \$1.3 million p.a. to around \$200,000 p.a. over the same period. In short, there has been a significant reduction in insurance claims and in accident operating costs across this Company's national operations in the 3 years since a significant overhaul of safety has been undertaken. In addition to the obvious benefits stemming from improvements in road safety practices, there are bottom-line savings achieved through savings such as reduced insurance premiums, fuel, and the obvious savings achieved through a decrease in serious injuries and deaths.

Company B also reports that their recent track record on safety has afforded them a workforce advantage, with many drivers attracted to the safe working conditions and the knowledge that they will not be 'pushed' to achieve unreasonable timeframes in the course of their duties.

Company B have been active in sharing learning and knowledge across the industry, with an example being collaboration with a state road agency on the development of a training DVD to promote understanding of the causes of truck rollover, as well as demonstrate effective measures for roll-over prevention.

2.3 Case Study C: Environmental Benefits

Company C is a provider of transport, warehousing and distribution services throughout Australia. It also runs its own transport terminals serving both metro and country distribution. It operates a fleet of more than 100 trucks, 120 trailers, and 80 rail containers, in addition to a pool of subcontractors. The fleet typically travels 13 million km per annum. The line haul fleet is maintained with an average age under 5 years.

In Australia, heavy vehicles above 12 tonnes gross vehicle mass are required to be speed limited to 100 km/h. Company C have adopted a 90km speed limit, with the speed-limiting devices fitted to their heavy vehicle fleet being set to this lower speed. This has been company policy for nearly two decades, originating not from any specific safety concern, but from a desire at the top level of management to operate at the highest level of safety.

Although fuel savings are not the primary objective of the policy, its application results in reduced fuel consumption of approximately 7 per cent, with a corresponding reduction in the output of greenhouse gases and pollutants. The size of this saving is consistent with the results of a recent study undertaken by Scania comparing the fuel consumption of two identical Scania R 560 V8-powered prime movers limited to 90 km rather than 100 km over a 1536 km round trip between Sydney and Melbourne in Australia was 56 litres – a 6% reduction. The truck travelling at the higher speed also produced an extra 148 kg of carbon dioxide over the round trip (Scania 2011).

Company C specialises in the transportation of ‘awkward freight’, including machinery, steel and glass. When dealing with more delicate materials, travelling at a lower speed provides an advantage of reducing the potential for load shift. The company has noted that in addition to the 90km policy resulting in significant savings in fuel expenditure, their safety culture is recognised as a point of difference within their market and customer base. They have identified benefits that include:

- Creating a ‘niche’ for the business around specialising in more fragile products
- The willingness of customers to pay more for safe, reliable service
- Improved driver retention as a result of the internal policy and culture demonstrating that the company does not sacrifice safety to achieve unsafe delivery schedules or timeframes.
- Low insurance premium rates, described by their insurer as being among the lowest in the industry.

Company C has also implemented a range of other measures including, as part of the company’s fatigue management program, providing take home sleep test machines to allow drivers to test their risk of sleep apnoea, and the use of in-vehicle monitoring systems to interact with driver, providing a countdown to the next scheduled break, as well as to provide alerts for over-speed travel, harsh braking and over-revving. This information is provided to drivers as feedback on their performance.

2.4 Case Study D: Partnerships with industry bodies are an effective way to influence practices across sectors and along the supply chain

'Working to Improve Road Transport Safety'

Company D is a leading steel company in Australia and New Zealand, supplying a large percentage of steel products sold in these markets. The transportation of steel and steel-related products is an integral part of the company's core business. The transportation is, however, largely undertaken by third party carriers.

Working safely is a condition of employment for Company D, and the zero harm approach adopted for operations on the company's own sites is also applied to transport and customer operations. This includes developing PBS vehicles specifically customised for the safe carriage, restraint and loading/unloading of steel. Guidelines have been developed in consultation with end users – transport, customers, drivers and depots – and drivers are trained and become accredited in loading each specific type of steel. They are then provided with a step-by-step illustration guideline for loading each type of steel to help remind drivers of the process.

Company D has joined with other manufacturers to form a Transport Safety Network Group to help improve heavy transport road safety. This group has developed an Australian Steel Industry "Chain of Responsibility" Code of Practice, which prescribes minimum and preferred behaviours to comply with Australia's Chain of Responsibility legislation.

Australia has incorporated the Chain of Responsibility principle into road transport law for heavy vehicles covering heavy vehicle driver fatigue, mass, dimension and loading and speed compliance. The Chain of Responsibility principle, simply stated, is:

all who have control, whether direct or indirect, over a transport operation bear responsibility for conduct which affects compliance should be made accountable for failure to discharge that responsibility.

Under Chain of Responsibility everyone in the supply chain, not just the driver, has responsibilities to prevent driver fatigue and ensure drivers are able to comply with the legal work/rest hours regulations, as well as mass and dimension limits and speed limits. If actions, inactions or demands cause or contribute to safety breaches, not only transport operators, but also consignors, receivers and loaders and unloaders can be held legally accountable (NTC 2008).

The Code in place in Company D and its supply chain specifically targets load restraint, mass and dimensions, driver fatigue and contractor safety management. The Chain of Responsibility Code of Practice also seeks to engage industry participants throughout the entire transport supply chain in adopting measures to mitigate heavy vehicle road accidents and infrastructure damage (Australian Steel Institute 2012).

Company D has now reached a point where it incurs less than one injury resulting in lost time for every million hours worked, reporting a 33% reduction in its Lost Time Injury Frequency Rate (from 0.9 lost time injuries per million hours worked in 2010 to 0.6 in 2011). The number of medically treated injuries per million hours worked also fell from 5.0 in 2010 to 4.4 in 2011. These efforts have lowered the likelihood of injury for a considerable number of people. Globally, in the steel industry, the safety performance of Company D is cited as a benchmark and recognised as a leader in safety.

In addition to the safety outcomes, through its engineering work around load restraint, Company D has also been able to achieve significant efficiencies around loading and unloading times – reducing production costs and bringing down the number of trips required to transport materials, delivering significant cost savings.

2.5 Case Study E: ‘People First’

‘We want our workers and customers to go home at the end of the day’

Each of the organisations interviewed for this project stated that their safety initiatives stemmed from a concern for staff members (and their families), clients and in fact all along the supply chain – underpinned by the belief that people are the most valuable resource of all.

Company E is one of Australia’s leading suppliers of heavy building materials to the construction industry. Company E produces aggregates, including crushed rock, sand, gravel, and premixed and precast concrete. Currently the fleet consists of around 120 drivers and 15 plants.

Company E has long had a strong internal focus on safety, however, after a fatal crash involving a customer transporting the company’s products in the customer’s own vehicle Company E began to focus their attention to safety beyond the factory gates. It examined safety impacts across the supply chain, extending awareness and safety initiatives to all parties involved, including customers. In short, Company E believes that their responsibility does not end when a customer leaves the lot.

Training and awareness activities form a large part of Company E’s safety program, and is delivered to both internal staff and customers. They observe that it is important that everyone who has a role in the transport and delivery of their products is fully aware of the safety and compliance requirements involved. Training and awareness activities include:

- Documents developed by Company E explaining the application of relevant road rules, in a user-friendly format and language
- Translating chain of responsibility legislation for customers, to ensure that they are aware of their obligations.
- Establishing a program of visiting customers, quarries and quarry operators, drivers, supervisors, sales loaders and managers to ensure that they understood the risks they are exposed to and how those risks can be managed safely
- Driver training that involves an extended period accompanying an experienced driver before being sent out solo
- Vehicle modifications following identification of braking risk – ‘maxi brakes’ are now standard issue for the manufacturer and are a cost effective way to ensure better braking. Company E has noted that the cost of installing maxi brakes is not hard to justify given the safety benefits delivered.

Company E recognised taking steps to improve safety for all parties involved in the transport and use of their products was necessary not just because of legal obligations, but because they want the people involved to get home safely each day and also to protect the reputations of both Company E and its customers Company E is working through their association to develop standards and training packages so that all drivers within the cement industry work to the same safety standards.

3. Discussion

For each of the companies described in the case studies, safety ranks highly as an issue within their workplace, and this is being translated to the on-road transport activities associated with the companies' businesses. Organisations have demonstrated a commitment to road safety practices from a workplace risk management perspective covering Occupational Health and Safety, Chain of Responsibility, operational maintenance, fatigue management, employee training and maintaining a safe workplace. Those companies that have been able to pass their experience in improving safe transport operations on to the industry through their relevant industry associations report that this is a valuable means of getting cooperation from both customers and suppliers. Industry developed codes of practice provide a strong base-line for raising standards across the industry as a whole. These can not only assist with raising the level of compliance with regulatory requirements, but also provide a means of lifting standards and safety practices beyond the legal minimum requirements.

Safety initiatives implemented by the organisations studied have demonstrated environmental and financial benefits, as well as the safety benefits that motivated their introduction. Addressing safety not only reduces crashes (and hence related deaths and serious injuries) but also operating costs. For example, preliminary analysis has indicated in the four years since Company B introduced a range of road safety initiatives (technology, training, monitoring and KPIs) it had not had a roll-over, death or serious injury. This delivered savings for the business that more than covered the associated implementation costs.

Safety needs to be driven from the top down but the approach needs to be developed through a two-way conversation with those affected – whether employees, customers, contractors or suppliers to ensure that it is feasible and practical. The companies examined were to collaborate on the sharing of road safety practices, initiatives and approaches on common issues so the companies, sector, community and public all benefit. Company A, for example, noted that it faced challenges in starting its program from scratch, and would be willing to share its experiences to spare other organisations the same hardship.

Putting strong evaluation and monitoring systems in place can identify safety issues before they result in injuries. This allows the company to deal directly and constructively with a problem based on a long term focus. Technology can be an enabler in this process. It is only one component of a safety strategy and must be linked with human training, engagement and support. Those companies in the case studies that had committed to the use of in-vehicle monitoring or other technologies found them most effective as a tool for providing drivers with feedback on their driving. This could lead to better driving performance in a way that allowed changes to be monitored and, if necessary, targeted for further improvement. Use of a simulator to provide experience with rare but hazardous conditions is one example of this.

The initiatives described in the case studies are just a part of the suite of activities taken by these companies in identifying the exposure of their company, their employees and those with whom they do business to road safety risks, and taking steps to eliminate or reduce those risks.

4. Conclusion

A key learning from the project has been the criticality of support from the 'top level' of companies. This project has highlighted the implementation of road safety initiatives carries with it a burden of demonstrating the value-add in many organisations (eg, for those where

these initiatives do not come from the top-down). It can be hard to make the case that outlaying money on road safety now will have benefits for the organisation later. However, in the cases where the progress of initiatives has been monitored, there are demonstrated examples illustrating that investing in safety does have medium and longer term financial and environmental pay offs, as well as benefits to corporate reputation that can build and retain market share.

It is recognised that not every road safety risk arising from the transport task associated with a companies' operation can be controlled by the company. Furthermore, one of the guiding principles of the Safe System approach to Road Safety is that people make mistakes, and the transport system should be able to accommodate this. However it is clear that substantial safety benefits can be realised by taking actions that are within a company's control, either directly, or through the influence that they can exert on commercial partners. At the core of this project is the conviction that more widespread road safety awareness and action will result in a higher overall standard of road safety.

Above all, perhaps the most critical component of realising successful road safety outcomes – and the flow on productivity and environmental benefits, is fostering a positive road safety culture. Findings from these case studies have shown that good results can be achieved when a 'culture of road safety' is ingrained within the company and in the minds and actions of everyone involved in its operations

Based on the five case studies it can be seen that companies which are implementing road safety initiatives do not perceive this as a cost but rather good business. Even though the case studies are from different industries and sectors, when road safety initiatives are actively 'championed' by senior management, with an established monitoring and evaluation framework and the right KPIs, not only is safety improved, but increased efficiency and reduced operating costs can also be achieved.

5. References

- ATC (2011) 'National Road Safety Strategy 2011-2020', http://www.atcouncil.gov.au/documents/files/NRSS_2011_2020_15Aug11.pdf last viewed 1 June 2012
- Australian Steel Institute (2006) 'Australian Steel Industry Chain of Responsibility Code of Practice', <http://www.docstoc.com/docs/34595952/Australian-Steel-Industry-Chain-of-Responsibility-%E2%80%9CCode-of-Practice%E2%80%9D> last viewed 1 June 2012
- European Transport Safety Council (2012) "Preventing Road Accidents and Injuries for the Safety of Employees Handbook" http://www.etsc.eu/documents/praise/PRAISE_Handbook.pdf last viewed 1 June 2012
- Mooren, L., Newton, J., Grzebieta, R. & Williamson, A. (2011) 'Assessment of existing approaches to corporate road safety management.' University of New South Wales <http://www.ntc.gov.au/filemedia/Reports/AssExistApproCorpSafetyMangUNSW.pdf> last viewed 1 June 2012
- National Transport Commission (2008) 'Chain of Responsibility' <http://www.ntc.gov.au/docview.aspx?documentid=01309> last viewed 1 June 2012

- National Transport Commission (2011), ‘A Corporate Approach to Transport Safety: Discussion Paper’,
<http://www.ntc.gov.au/filemedia/Reports/CorpApprRoadSafetyDisPaperAug11.pdf> last viewed 1 June 2012
- Scania (2011) ‘Scania Fuel Duel counts the cost of speed’
<http://www.scania.com.au/about-scania/media/press-releases/press-release-37.aspx> last viewed 1 June 2012
- VicRoads (2012) ‘Chain of Responsibility Guidelines’
<http://www.vicroads.vic.gov.au/Home/Moreinfoandservices/HeavyVehicles/ComplianceAndAccreditation/ChainOfResponsibility.htm> last viewed 1 June 2012.