Workplace Transport Safety:  
The Mobile Financial Crisis

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Abstract

This paper describes that transport safety is one of the highest safety issues for Australian businesses. There are more deaths in the transport industry than any other in Australia and motor vehicle incidents are by far the greatest cause of loss of life in workplaces. Road crashes outside the workplace also impact on businesses. The cost of motor vehicle crashes to businesses is likely to exceed $9 billion annually, but has not been investigated in detail and is generally not appreciated by individual businesses. The issues regarding transport safety risks are described, together with the well developed strategies to reduce the impact of motor vehicle crashes to industry so that the large financial risks to business can be reduced. The focus in this paper is on road safety which is the largest workplace safety issue, but the concepts and discussion are generally applicable to other areas of transport.

Introduction

Transport is crucial to Australia and is under pressure for the future, so there are upward pressures on transport safety. The transport system is diverse and complex which can make management of safety difficult. Transport is a risky activity and results in substantial costs and loss of life. However, transport safety is well understood and is therefore manageable in the workplace. Given that transport occurs in almost all businesses, and involves risks, organisations need to ensure that transport is managed properly to ensure safety and thereby minimise costs. The financial risks of poor transport safety are very large but are not well recognised and can be much better managed by many businesses.

The Transport System

The transport system is complex with many components. In its simplest form it comprises vehicles, users, and infrastructure. However each of these has levels of detail. So for instance, infrastructure includes roads, railways, terminals, signalling systems, and land uses or facilities.

In addition to the basic components there are a multitude of other elements which relate to transport systems including enforcement, education, technology, three levels of government, policy, natural environment, community response, research, innovation, leadership, funding, industry practice, regulation, systems, data, information, and so on. Each of these imposes requirements and constraints and costs which need to be managed to meet organisational objectives.
The Importance of Transport

It will come as no surprise that transport in Australia is important, and even more so in Western Australia. The size of the country, the spread of activity and the types of industry which form the foundations of Australia make transport essential. Poor transport causes economic inefficiencies, reduces Australia's international competitiveness, degrades the environment and threatens communities.

However, the size of transport is minimised by the way it is assessed. For instance, government statistics typically identify industry sectors such as transport and storage, mining, agriculture, and so on, which has two minimising effects. Firstly, such segregation distributes the transport activity across many industries. Secondly, transport, storage and logistics are all separable but integrated components. So, for example, a mining or can go through many transport storage and logistics processes, which are all in the 'mining' industry sector. Product can be quite commonly mined, loaded, transported by truck, unloaded and stockpiled, reclaimed and reloaded, transported by train, unloaded and stockpiled again, reloaded and transported by sea, all within Australia.

As a result of attempting to understand the whole of transport, storage and logistics, it has been estimated (ALC 2008):
- transport in Australia accounts for 9% of the national economy (GDP);
- the transport, storage and logistics industry represents 14.5% of national GDP; and
- the transport, storage and logistics industry is a massive, 24.1% of the Western Australian economy.

Consequently, transport, storage and logistics is by far the largest of any sector in the Australian economy. Therefore transport is essential for communities and the Australian economy. Efficient and effective passenger and freight transport provides a numerous benefits to the Australian community, business and the environment. Clearly an efficient, effective and safe transport system is required to meet Australia's short and long term needs.

Western Australia's Transport Future

Western Australia's transport future is primarily linked to the economy and population growth in the short to medium term. In this short term there are few constraints, but in the longer term there are many potential threats.

According to the Australasian Railways Association (ARA 2009), Australia faces significant challenges in meeting future transport outcomes including:
- transport capacity;
- greenhouse gases and other pollution;
- operation and infrastructure cost escalation;
- congestion and slowing urban travel speeds;
- vulnerability to liquid fuel availability and price;
- road crashes and health impacts of transport emissions;
- deterioration of urban amenity; and
- increasing funding demands on Treasuries.

The Bureau of Transport and Regional Economics (BTRE 2007) estimated that for Perth between 2010 and 2010, population will increase by 13%, road freight transport will increase by 34%, traffic delays will increase by 28% and congestion costs will rise by 69% to $1.2 billion per annum. These impacts will occur provided we continue to make the improvements to our transport systems which we have achieved in the past. However due to many constraints, this continues to become increasingly difficult.
Solutions to these challenges will be diverse and will need to be implemented by governments, businesses and individuals. Many of the pressures, challenges and impacts will be borne by businesses. In addition it is likely that changes to transport will put upward pressure on road safety, by increasing the risk, with consequential increases in impacts to workplaces.

Transport Safety in the Workplace

There are three key areas for transport safety in the workplace:
1. the transport, storage and logistics industry where transport is a principal component;
2. any workplace, since transport occurs in almost all industries, businesses and enterprises; and
3. transport outside the workplace, where effects occur to operations, such as staff off work.

Transport safety in the workplace has many facets. Good safety is good business, but transport safety is often considered the responsibility of the transport department, the Police, the road authorities or the Office of Road Safety. However, transport has many regulators which can overlap. The Police, Department of Transport, Rail Safety Regulator, Main Roads WA, local governments and others all have a role in setting or enforcing transport regulations, in addition to the workplace safety activities of the occupational safety regulator.

The safety performance outcomes of transport in the workplace is summarised in the Table 1. Clearly road safety is the most serious workplace issue in terms of quantum and relatively high risk.

Table 1. Transport and Occupational Safety Consequences

<table>
<thead>
<tr>
<th>Indicator (2007)</th>
<th>Road</th>
<th>Rail</th>
<th>Marine</th>
<th>Air</th>
<th>Other Workplace Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recorded Workplace Fatalities</td>
<td>98</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>232</td>
</tr>
<tr>
<td>National Fatalities</td>
<td>1616</td>
<td>37</td>
<td>52</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Number of deaths</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Fatality Rate</td>
<td>7.69</td>
<td>0.18</td>
<td>0.25</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Deaths per 100,000 population</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Injury Rate</td>
<td>150.7</td>
<td>0.84</td>
<td>0.57</td>
<td>0.21</td>
<td></td>
</tr>
<tr>
<td>Serious injuries per 100,000 population</td>
<td>(2006)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Fatality Rate</td>
<td>5.36</td>
<td>2.8</td>
<td>0.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaths per billion passenger km</td>
<td>(2006)</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Improvements to road safety continue with the number of fatalities reducing by 2.2% per year (BITRE 2010a) and the number involving articulated trucks reducing by 6.8% annually. However there is no room for complacency, as the number of fatalities involving rigid trucks has been increasing by 7.1% annually over the last 3 years and the number involving buses increasing by 17% annually (BITRE 2010b). The numbers and trends for deaths and injuries in workplaces caused by road crashes, and their costs remains unknown.
The impacts of road crashes in the work place are diverse (ERSO 2009) and include:

- **Severe health loss**: Work-related motor vehicle crashes are a leading cause of death in the workplace in industrialized countries.
- **Higher risks**: Professional driving is a highly hazardous activity, involving far higher risks than those encountered in virtually any other occupation or most other activities of daily life.
- **High costs**: The costs of work-related crashes are high both for society and employers. Therefore it makes sense for businesses to improve transport safety in their operations.

It has been estimated that up to a third of all road traffic accidents involve somebody who is at work at the time (HSE 2003). However, the number in industrialised countries could be as high as 40% (Fort et al 2010).

Most road safety workplace issues have focussed on the trucking industry and there is very little good information about other workplace road safety issues, impacts and solutions (Stuckey and Lamontagne 2005).

**Transport Industry Safety**

Safety in the transport and storage industry is a critical issue. In 2007-08, the transport & storage industry recorded (Safe Work Australia 2009a):

- 68 fatalities, the highest number in any industry sector, 52 of which were in road freight transport;
- the highest number (9945) and percentage (7.6%) of total serious claims for any occupation subcategory; and
- 15.1 compensated fatalities per 100,000 employees, the highest fatality incidence rate of any industry.

It is interesting to note the commentary by Safe Work Australia (2009a) that the Compendium does not include all work related incidents occurring each year and underestimates the number of work-related injuries.

The impacts in the transport and storage industry are very unclear and may be highly misleading. It is stated (Safe Work Australia, 2009b, p10) that, "while the injury rate is considerably higher than the Australian rate, the severity of the injury, as measured by time lost from work, was similar to the Australian profile." However, this report does not measure injury severity directly, but uses the duration of absence from work, the mechanism of injury, and the type of injury as proxies. Perhaps most telling omission is that despite this industry recording the highest number of deaths of any industry, fatalities are not discussed and are presumably not included since there is an indeterminate number of days absent from work.

Comparing information from coroner's reports with workplace insurance claims suggests at least 35% of all work–road deaths are filtered out of work-related systems into road-related insurance (Stuckey and Lamontagne 2005).

**Transport Safety Issues for any Workplace**

Transport safety in any industry is important, simply because many people in other industry sectors (such as retail, mining, agriculture, utilities and administration), are involved in transport. In addition people travel in almost all businesses.

In terms of cost or severity, vehicle crashes are serious. Vehicle crashes are the second highest cost per insurance claim, and transport work is second highest frequency of serious claims.
**Transport Safety Issues Outside the Workplace**

Transport safety outside the workplace is important because employees involved in road crashes in their own time, can affect workplaces in the same way as when they are involved during work time. The difference is that the workplace may have no responsibility, yet business incurs significant costs nevertheless. Therefore there can be significant business benefits for workplaces if employees are safe during private time.

For Australia as a whole, about 1,400 people die in road crashes each year and more than 30,000 are injured. As a result the cost of road crashes in Australia is over $30 billion annually. These road crashes result in approximately 30% of lost time at work, but don’t necessarily occur in the workplace. Yet these crashes impact on businesses in many of the same ways that road crashes do when they occur within workplaces.

The cost of these crashes in Australia has not been analysed in detail. However, if work related road crashes represent 30% of all road crashes, the cost to the Australian community would be in the vicinity of $9 billion per annum. A large proportion of these costs are borne by business through lost time, lost production, insurance costs, vehicle costs and so on. However, it has been noted (ERSO 2009, p8) that "Many organizations do not count the hidden costs of crashes".

**Workplace Transport Safety Management**

The most modern approaches to road safety strategy are consistent with what has become known as the 'Safe Systems' approach (RSC, 2009). This approach focuses on safe vehicles, safe drivers, safe roads and safe speeds. At the same time it recognises:

- the importance of setting safety targets;
- that drivers will make mistakes and shouldn’t have to pay for them with their lives;
- recognise the limits of the human body to withstand energy; and
- integration and collaboration between contributing parties and authorities.

These factors and principles provide a sound basis for developing road safety strategies within workplaces.

Each company, country and location has similar road safety issues, and different specific issues. In general, Western Australian issues regarding safe road use include (ORS 2009):

- safe vehicles;
- safe speeds;
- driver competency;
- safe loads;
- fatigue and alcohol;
- unusual events;
- unsealed road safety; and
- long distance driving.

It is not evident that businesses manage all road safety risks thoroughly. As an example, both fatigue and alcohol are recognised as risk factors in both road safety and occupational safety generally. However, perhaps fatigue has not been recognised as being as severe in terms of performance impairment as it is. It has been estimated (Dawson and Reid 1997) that being awake for 17 hours results in the same performance impairment as a 0.05% blood alcohol content, and being awake for 24 hours results in the same performance impairment as a 0.10% blood alcohol content.
Many companies manage alcohol and fatigue in the workplace, although various questions arise. If companies won’t accept workers with high blood alcohol content (say, over the legal limit for driving), should companies accept workers who have been awake (not just working) for more than 17 hours? Another question arises as to the liability of a company if it allows a worker to become fatigued in the workplace, by working long shifts or travelling for a long period of time, and the worker is involved in a road accident occurs after leaving the workplace.

Currently responsibility for road crashes rests primarily with the driver to ensure driving fitness, competency, safe operation and a roadworthy vehicle. The Western Australian Government, in conjunction with others around Australia, is moving towards introduction of 'Chain of Responsibility' legislation to improve road safety. The object is to ensure that whoever is responsible for any activity which results in a road crash is legally liable. These laws address mass, dimension and load restraint and will affect many more businesses than previously. Therefore business will need to ensure proper management of any activity which could result in a road crash.

There are numerous other risks which many businesses appear to not manage very well if at all. For instance businesses need to consider ensuring crashworthy vehicles (e.g. 5 star ANCAP crash rated) and workers competency to drive (e.g. have valid drivers' licences, are trained to drive on unsealed roads, or are trained to drive four wheel drive or other particular vehicles).

**Workplace Transport Safety Solutions**

Available information, such as the papers discussed above, suggests that the following responses are likely to be required to properly manage workplace road safety:

- workplace vision and road safety policy;
- organisation and structure;
- management systems and information;
- staff performance management;
- risk management;
- risk identification, elimination, reduction, incident response;
- recruitment and selection;
- induction programs;
- fleet selection and maintenance;
- incentives and disincentives; and
- training and education.

The results of workplace road safety strategies have been identified from practical experience (ORS 2009):

- reduced stress and trauma to staff and their families;
- increased morale and improved productivity;
- increasing staff availability for work;
- reduced vehicle damage and work rescheduling;
- reduced administration and HSE management;
- increased vehicle availability;
- reduced business and customer interruptions;
- reductions in vehicle and workers’ compensation insurance premiums;
- lower repair, maintenance and running costs; and
- increased resale value from improved care of vehicles by drivers.
Conclusion

Transport is crucial to all Western Australian workplaces. Road safety is the most important workplace safety issue which imposes substantial financial costs, although the size of these costs is not well understood. Road safety results in substantial financial risks in workplaces, including:

- the uncertainty of the costs borne by companies;
- the full costs of road crashes during work time are not uncertain and underestimated and have not been quantified in financial terms;
- the cost of road crashes outside work time, which are borne by companies;
- the risks of liability if workplace practices contribute to a road crash, whether or not it occurs during work time.

Road safety in workplaces can be well managed and will result in significant financial benefits and reduced company risk.

References


Australasian Railways Association (ARA) (2008), "Submission to the National Transport Commission Rail Productivity Review Issues Paper", ARA.


Bureau of Infrastructure, Transport and Regional Economics (BITRE) (2009), 'Road Crash Costs in Australia 2006', Report 118, BITRE.

Bureau of Infrastructure, Transport and Regional Economics (BITRE) (2010a), 'Fatal Heavy Vehicle Crashes Australia, Jul - Sep 2009', BITRE.

Bureau of Infrastructure, Transport and Regional Economics (BITRE) (2010b), 'Road Deaths Australia, June 2010', BITRE.


Health and Safety Executive (HSE) (2003), 'Driving at Work', HSE (UK).

Office of Road Safety (ORS) (2009), 'Workplace Road Safety', ORS.


World Health Organisation (WHO) (2009), 'Addressing the Socioeconomic Safety Divide: A Policy Briefing', WHO.