

Fleet Safety: the Road from Research to Practice

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Abstract

Over the past decade, light vehicle fleet safety has become an increasingly popular focus for road safety researchers and consultants. However, those fleets who have taken a best practice approach to managing fleet safety are in the minority. This means that the health and safety of hundreds of thousands of Australians who drive for work purposes are still put at unnecessary risk. This paper outlines some of the reasons why fleets have failed, or have been unable, to implement satisfactory safe driving programs within their organisations. These include practical, organisational and economic barriers, which are often misunderstood and underestimated by researchers and consultants. A collaborative approach is outlined which includes strengthening the national approach to fleet safety, greater efforts to broaden the scope of stakeholder engagement, improving national road fatality data, and introducing legislative measures to compel organisations to address the issue appropriately.

Introduction

Over the past several years there has been a consistent focus on light vehicle fleet safety in the research literature. This interest has initially stemmed from a road safety interest in the problem. In Australia, researchers at the Centre for Accident Research and Road Safety – Queensland (CARRS-Q) and the Monash University Accident Research Centre (MUARC) were among the first to complete significant reviews of the issue. For example, a Victorian working party of government and non-government stakeholders sponsored one of the first Australian reviews of fleet safety practices by MUARC (Haworth, Tingvall, & Kowaldo, 2000), and the Australian Transport Safety Bureau (ATSB) commissioned a report by CARRS-Q (Murray et al., 2003). These reports have included a number of recommendations at both organisational and governmental levels.

Fleet Management and Fleet Safety in Australian Organisations

Whilst the term 'fleet safety' has been used extensively, it is rarely defined. In the literature, it is most often used to refer to the safety of both vehicles and drivers. However, in liaising with industry professionals in Australia, there appears to be inconsistency and lack of understanding about the term. As fleet management is fundamentally concerned with the logistics and economics of fleets and fleet risk management, it is not surprising that fleet safety is often thought about only in terms of vehicles.

It is clear that a concise definition of fleet safety, applicable to organisational fleets of all types and sizes, is still required by researchers, consultants and practitioners alike. This definition needs to take into consideration the diverse nature of the problem and the strategies involved in addressing it. As such, the following definition is proposed:

'Fleet safety' is the organisational practice which aims to maximise the safety of vehicles and drivers at work, through effective strategies in fleet management, occupational safety and organisational development.

Whilst the focus of this paper is on light vehicle fleet safety, further discussion may also find this definition relevant to heavy vehicle fleets. Also used are the terms 'work-related driver safety', which refers more specifically to drivers and their behaviours while driving for work purposes, and 'work-related road safety', which refers to the drivers' behaviours and the safety of vehicles.

In Australia, fleet management arrangements differ significantly between organisations within both the private and public sectors. Many large national and state-wide organisations maintain and operate their own vehicle fleet which may consist of some or all of the following fleet management functions: procuring vehicles (including selecting fit for purpose modes, outfitting and/or modifying vehicles), maintaining vehicles, maintaining insurance and fuel arrangements, monitoring and reporting mileage. Most fleet management units in large organisations also coordinate pooled vehicle or short-term hire centres. In addition to the core fleet management functions, pooled and short-term hire fleets have various logistical responsibilities.

Roles, responsibilities and management commitment

Large organisations with internal fleet management units often consist of teams of staff with responsibilities over certain operational areas including: client/customer service, maintenance management and fleet risk management, as well as other generic units such as finance and accounts management. Increasingly, some large fleet management organisations (such as QFleet in Queensland) also have strategic units focusing on issues such as safety, environment and marketing.

In small to medium sized organisations, fleet managers and staff are primarily situated within finance or other business areas with an operational or financial focus. In these smaller fleets, fleet management services are often outsourced, or a combination of internal expertise and outsourced services are used. In some cases, where fleets consist of a small collection of pooled vehicles or operational vehicles (usually leased from an external provider) staff are internally recruited or selected to perform some fleet management responsibilities. These may include managers or staff whose official roles are dedicated to areas such as human resources, facilities or utilities

management, finance, or other operational areas. Alternatively, fleet management functions may be partially or completely outsourced. Research has identified that management commitment is strongly related to fleet safety climate and work-related driver behaviour (Wills, Watson, & Biggs, 2006).

Given the substantial variation in the nature of fleet management across organisations and the roles and responsibilities of staff involved in the management of vehicles, as summarised above, it is not surprising that fleet safety too receives a variable level of understanding and the perceived importance of it varies greatly across and within organisations. In many cases, it appears the largest interest fleet managers have in safety is with regard to vehicles, where attention is most often focused on selecting vehicles with desirable safety features.

As fleet management focuses primarily on vehicle-related issues, there often lies the assumption amongst fleet professionals, that fleet safety is achieved through providing vehicles that meet the relevant Australian Design Rules (ADRs), maintaining vehicles in accordance with manufacturer specifications or guidelines, and maximising vehicle fit for operational purpose. This could be referred to as a 'compliance' or 'minimalist' approach, where organisations do the minimal actions required by the applicable legislation or regulation. Another symptom of organisations, who take this approach to fleet safety, is a reactive approach to driver management. This usually includes providing training to drivers after a series of crashes with obvious commonalities, or introducing strategies after a significant increase in insurance premiums.

Experience dealing with national and state-wide fleets (such as the Queensland Government) suggests that often there is a greater focus on fleet safety within organisations operating in rural and regional settings. This may include greater support for driver training and/or education, and strategies to improve the security and safety of drivers in emergency or vehicle break down situations (such as including first aid kits and communications devices in vehicles). Further research into differences between fleets operating in rural and/or remote versus metropolitan contexts may contribute to understanding differences in organisational commitment to fleet safety.

Economic factors

For organisations that procure and remarket their own vehicles, maximising the residual value at the end of the vehicle's operational life (that is maximising the return) is, logically, a key objective. The success of this function, often referred to as fleet risk management, is affected by various factors, many of which are external to organisation and are difficult to predict or control. Fleets set their predicted residual values using market prediction which can be acquired through commercial service providers. Fleet risk management often also incorporates factors based on experience and

observation of market trend such as fuel consumption, vehicle colour, accessories and safety features.

For organisations who self-manage their vehicle remarketing, fleet mix diversity is also an important consideration. This generally refers to the mix of vehicle models and makes in the fleet, but can also include other factors such as cylinders and engine size, colour, and types of vehicles. This means that the residual value assigned to a particular model of vehicle may also be affected by the number of same or similar vehicles in the fleet.

Legislation

In Queensland the *Workplace Health and Safety Act 1995* defines "a vehicle supplied by an employer for use by a worker in the performance of work" as a workplace. The relevant legislation in most Australian jurisdictions dictates a similar situation. This has been well recognised in the fleet safety literature, and is used as a key selling point by consultants and researchers alike in the fleet safety area. Numerous experts have also noted that work-related driving poses a significant Workplace Health and Safety (WH&S) risk to the Australian workforce (for example, Haworth et al., 2000; Murray et al., 2003). Given this, it is surprising that WH&S authorities across Australia have not taken a greater legislative and regulatory position on the issue. For organisations there is limited guidance available on their legislative obligations with regard to fleet safety issues.

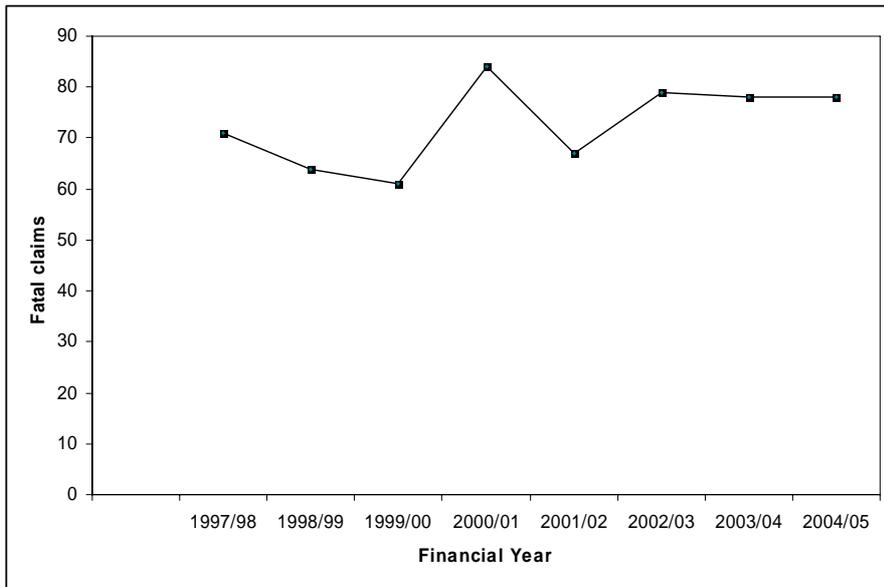
The Current State of Fleet Safety in Australia

The most recent workers' compensation statistics published by the Australian Safety and Compensation Council (ASCC) indicated that 'vehicle accident' remains the most common mechanism of injury for the 2004-05 year, accounting for 41% (88 claims) of all compensated fatalities (ASCC, 2007). This figure is relatively higher than the previous years; wherein 35% (67 claims) of fatalities were classified as 'vehicle accident' in 2003-04 (ASCC, 2006), 34% (71 fatalities) in 2002-03 (ASCC, 2006), and 36% (71 fatalities) in 2001-02 (National Occupational Health and Safety Commission - NOHSC, 2003). These statistics appear to indicate a steady trend in the proportion of work-related fatalities attributed to vehicle crashes at a national level.

National trends

In order to examine the national trend in work-related road fatalities, further analysis of the national work-related fatalities was conducted using data downloaded from the ASCC National Online Statistics Interactive (NOSI) system with data extracted from the National Data Set for Compensation-based Statistics (NDS). Figure 1 shows that between the 1997/98 and 2004/05 financial years there was indeed an increasing trend in work-related road fatalities. However, there appears to be a plateau since 2002/03.

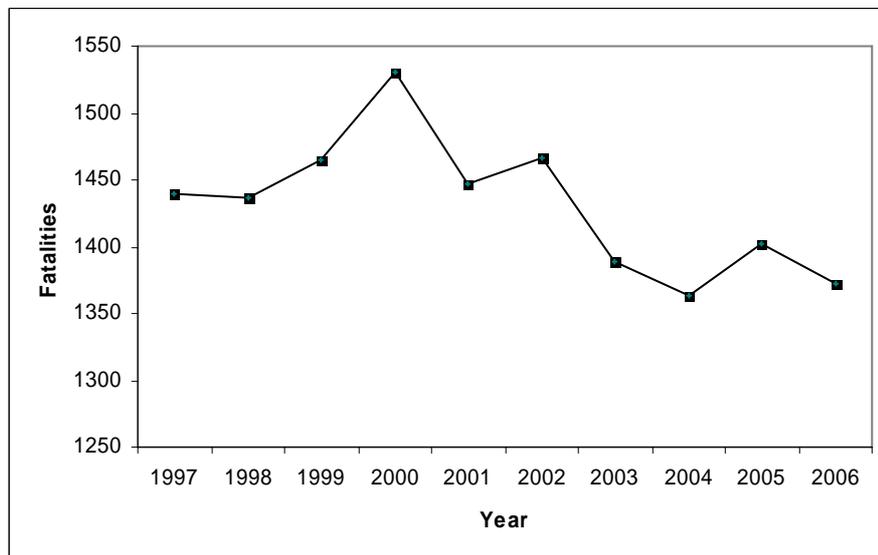
Figure 1. Total fatal workers' compensation claims resulting from road crashes in Australia, 1997/98 – 2004/05 financial years



Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases; report created 16/08/2007¹.

In order to compare this trend to the national road toll, Australian crash fatality data was downloaded from the ATSB Fatal Road Crash Database. Figure 2 shows that the national road toll has been steadily decreasing since 2000.

Figure 2. Total road fatalities in Australia 1997-2006



Source: Fatal Road Crash Database (ATSB); report created 16/08/2007².

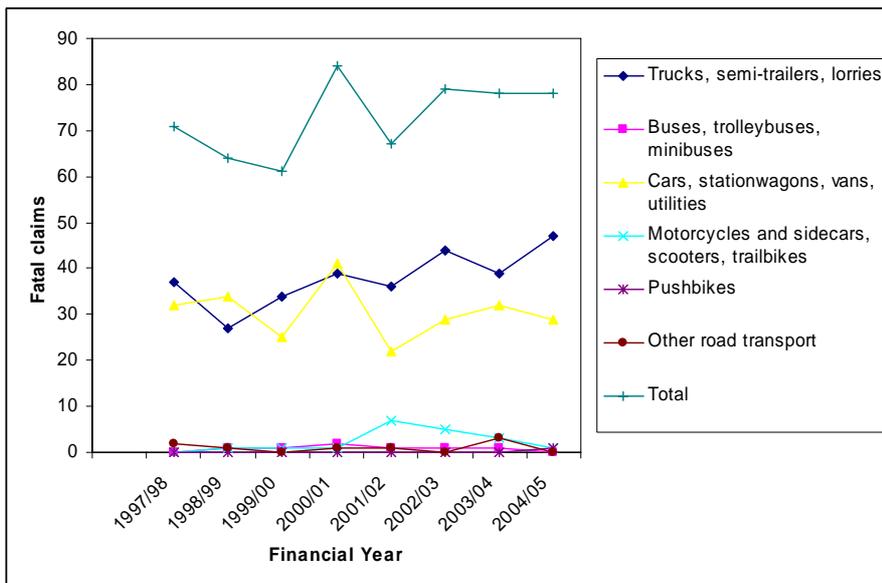
Figure 3 includes a breakdown of the work-related crash fatalities shown in Figure 1. It reveals that the majority of fatalities involved vehicles classified as trucks (including heavy trucks, semi trailers

¹ Includes all accepted workers' compensation claims (excluding journey claims) that resulted in a fatality; all fatal claims where agency of injury was categorised as 'road transport'. It should be noted that the 2004-05 claims statistic is based on preliminary data.

² Includes pedestrian fatalities.

and lorries) and cars (including sedans, station wagons, vans and utilities). This data shows that over this eight year period, the number of heavy vehicle fatalities has been steadily increasing, whilst the work-related fatalities involving cars appears to have reached a plateau after peaking in 2000/01. The trend line for work-related fatal crashes involving cars, appears to mirror the national road toll trend up until approximately 2002-03. However since then, the trend in work-related fatal claims involving cars has slightly increased.

Figure 3. Fatal workers' compensation claims resulting from road crashes in Australia, 1997/98 – 2004/05 financial years (broken into road transport type)



Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases; report created 16/08/2007.

Data limitations

Whilst the purpose of these brief analyses is to highlight the general trend in work-related/fleet crash fatalities over recent years, it is important to note certain limitations to this data. One obvious limitation is the difference in time sequence between the national crash fatality (ATSB) and the workers' compensation (ASCC) data, wherein the former is collated by calendar year and the latter by financial year. Although the analyses presented are preliminary, and displayed for the purpose of noting the general trend, this limitation should be noted. Additionally, the general road fatality data refers to fatal crashes involving all vehicle types, including articulated trucks and buses, as well as those involving pedestrian fatalities. Comparatively, whilst the workers' compensation data can be segmented into vehicle type, it does not include this level of detail.

Data summary

Whilst there has been an increasing focus by researchers and consultants on improving fleet safety within Australian organisations, the general national trend as shown by workers' compensation data, does not appear to be substantially different from that of the general crash

fatalities. This suggests that whilst crash rates may have reduced within some organisations in which proactive fleet safety strategies have been introduced, overall work-related road safety remains an issue in Australia. Although crash fatalities involving light passenger cars appear to have reached a plateau since 2001/02, at this stage there does not appear to be a decreasing trend. This is important to note, given the clearly decreasing trend in national road fatalities since 2001.

Future Challenges for Fleet Safety Advocacy

A national collaborative approach

The National Road Safety Action Plan 2007-2008 (Australian Transport Council – ATC, 2006) included a number of actions relating directly to fleet safety. In particular, action areas '4.3 Safer Vehicles' and '4.4 Safer Road Users and Safer Behaviour' recommended that government fleets lead by example with fleet safety programs in the public service and policies regarding the safety of fleet vehicles, such as preference for the purchase of vehicles with Electronic Stability Programs (ESP). Furthermore, item 4.4.4 also recommends that governments develop fleet safety guidelines for use internally and by commercial fleets which emphasise safe driving behaviour, use of seatbelts, discouraging any mobile phone use, and a zero BAC requirement. A number of state governments have developed fleet safety policies and guidelines which are publicly available (including government agencies in Queensland, Western Australia and Victoria). A number of comprehensive fleet safety guidelines have also been developed and made publicly available by a number of overseas governments, particularly in the UK. Furthermore, a number of commercial and academic organisations in Australia have guidelines and tools available to fleets. There appears to have been few evaluations on the uptake and effectiveness of these tools so far.

Between 2000 and 2006, 23 papers were presented at the annual Australasian Road Safety Research, Education and Policing Conference on topics directly relating to fleet safety. Most of these have focused on: 1) current fleet safety practices within Australian and international organisations, including government, commercial and educational organisations; 2) identifying and/or comparing the individual and/or organisational factors affecting work-related driver safety; and 3) conceptual and theoretical models of fleet safety. Additionally, at least two papers identified some of the barriers to implementing fleet safety programs in Australia and the UK.

Given the continued focus on fleet safety by governments, researchers and road safety practitioners, it is surprising that work-related road crash fatalities continue to rise in comparison to other types and causes of occupational fatality. However, the experience of researchers and consultants appears to indicate that whilst there is an abundance of guidelines and advice available to organisations, those proactively implementing such strategies is limited. It is therefore

clear that a renewed approach to fleet safety in Australia is required. This approach needs to proactively engage organisations and stakeholders in the development and implementation of the freely available guidelines.

Engaging the correct stakeholders

Fleet managers have often been the primary focus of consultants and researchers targeting fleet safety issues. However, as outlined earlier, fleet safety is not a fleet management issue alone. Nor is it limited to WH&S officers. When analysed from a holistic point of view it is complex, and like all road safety issues, strategies to address or improve it need to take this into consideration. Consequently, there are several groups or divisions within every organisation who should be consulted and included in any program of fleet safety initiatives or single strategies. Based on a combination of research and practical experience, Table 1 considers the main stakeholder groups in most organisations, and identifies the function or responsibility creating an interest or stake in fleet safety for each group. As shown, the level of fleet safety stakeholders in organisations ranges from the highest level (such as CEO), through to line managers or supervisors, and all employees with access to vehicles. A future challenge for researchers, consultants and other professionals interested in improving fleet safety, is to broaden the scope of their stakeholder engagement strategies to include and empower these groups.

Table 1. Fleet safety stakeholders

Stakeholder Group	Responsibility / Stake
CEO	<ul style="list-style-type: none"> legislatively accountable for workplace health and safety performance of organisation (human resource and economic) public image of organisation
Senior management	<ul style="list-style-type: none"> appropriate strategies to achieve organisational objectives and performance goals
Human resource management	<ul style="list-style-type: none"> workers' skills and knowledge appropriate accurate and appropriate job descriptions appropriate professional development strategies
Fleet management	<ul style="list-style-type: none"> maximising residual value of vehicles selecting fit for purpose vehicles implementing vehicle policy
Finance management	<ul style="list-style-type: none"> allocating sufficient funds to achieve organisation objectives
Supervisors / team leaders	<ul style="list-style-type: none"> health, safety and wellbeing of employees
WH&S officers	<ul style="list-style-type: none"> advising management on how to meet WH&S legislative obligations
Employees / workers	<ul style="list-style-type: none"> health, safety and wellbeing of themselves and others

Murray, Faulks and Watson (2007) recently noted that fleet safety programs in UK organisations, particularly those with a community road safety focus, can also have positive impacts upon organisational public image in addition to other benefits. Further research into the link between corporate road safety programs and public perceptions, confirming this relationship, may assist the improvement of fleet safety in Australia as well.

Legislation and regulation

Given the lack of legislative attention to fleet safety particularly with regard to light passenger vehicles, it is clear the legislation and regulation remains one area where further development is still required. Murray and colleagues (2003) recommended that a key area of legislative and policy development for improving fleet safety is the application of Chain of Responsibility (CoR) regulation to light vehicle fleets. To date, the authors have not been able to identify any Australian jurisdiction where this has occurred. CoR legislation currently applies to the heavy vehicle sector. According to the National Transport Commission (NTC), the principle of CoR legislation is that "any party who has control in the transport chain can be held responsible and may be made legally liable" (NTC, 2004, pg. 2). This means that while drivers are still held responsible for those behaviours for which they could be held 'reasonably accountable', it also acknowledges the responsibility of all parties involved in the transport chain, from CEOs who set organisational policy, through to supervisors who set rosters. The application of this or similar legislation to light vehicle fleets would mean that those stakeholders identified in Table 1, could be held legally liable for fleet safety. As noted by Murray and colleagues, this would be expected to have a significant impact upon fleet safety in Australia. It is therefore suggested that further investigation into the application to light vehicle fleets of CoR or similar reforms be investigated by Australian state jurisdictions or a pertinent national body.

Data improvements

The inclusion of purpose of journey in police crash reports was recommended by Murray et al. (2003). According to representatives from Australian state transport agencies, several jurisdictions including Queensland, Victoria and Tasmania, have started to collect this information through police crash reporting, most as recently as 2006. Once this data is recorded consistently across Australian state jurisdictions, it will be possible to identify differences in factors contributing to work and non-work related crash fatalities. This will help to eliminate the type of data limitations mentioned in this paper, and to establish more valid and reliable trends than is currently possible. It is suggested that states continue to investigate the inclusion purpose of journey data in serious and fatal crash reports. As seen with many road safety issues analysed at a national level, the current data limitations support further efforts towards greater nation-wide consistency in data collection methodologies for fatal and serious crashes.

CONCLUSION

Whilst the general road toll in Australia has steadily decreased since 2000, the proportion of work-related fatalities attributed to road crashes appears to have reached a plateau since 2002, in spite of the increased focus on fleet safety from researchers, governments and consultants. This suggests that there is still a long road from research to practice in fleet safety in Australia. Some areas requiring continued attention include the strengthening of the national approach to fleet

safety, greater efforts to broaden the scope of stakeholder engagement, introducing legislative measures to address fleet safety in light vehicle fleets, and improving national road fatality data to include purpose of journey data.

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