# Best practice fleet management and priority actions

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## Abstract

This paper reviews relevant literature and publicly available fleet management programs, along with workplace road safety policies and procedures. Discussions were also held with managers of selected companies about their fleet safety achievements. This work identified key vehicle and driver safety interventions from the literature, plus best practice fleet management and workplace road safety policies and priority actions for consideration within fleets. Managers reported progress in organisational acceptance and recognition that road trauma is a social, human, financial, reputation, efficiency and operational risk to an organisation and needs to be given priority at all management levels. The study investigated workplace safety management principles and their application in road safety management. Within standard management processes, companies wishing to reduce their road safety risk should: reassess the need for travel; reorganise work journeys to reduce exposure to risk or use lower risk journey options; invest in the upfront safety quality of vehicles that are being used; and engage their staff and stakeholders about risk management on the road.

## Introduction

The workplace is a largely closed environment with controlled access. The road network is by contrast a largely open environment with open access. Employee safety on the road can at first seem relatively complex for companies. How can employee safety risks be controlled in an open access environment? And where the employee is performing this task everyday outside of work, how does the company intervene when the employee is at work?

The answer lies within the growing notion in road safety of 'shared responsibility'. Over many years, road users were largely held responsible for their own safety, but that notion is coming to an end with the realisation that the inherent safety of the environment and the technology deployed within that environment largely determines the safety of any individual. Companies have legal safety obligations, including in vehicles which are legally defined workplaces, and can also play a vital role in improving the safety of the entire community.

The purpose of this paper is to identify best practice fleet management and workplace road safety policies and priority actions. In support of this, relevant literature and publicly available fleet management programs is reviewed, and discussion with managers of selected companies about their fleet safety achievements is reported.

### *Work-related road trauma*

Just over half of road travel in Australia is work-related. The Australian Bureau of Statistics (ABS) reported that over the 12-month period to October 2010, nearly 15 million passenger and light commercial vehicles on register in Australia were estimated to have travelled a total 206,075 million km – 29.6% were classified as business trips, 25.6% as travelling to and from work, and the remaining 44.8% were classified as personal and other travel (ABS, 2011).

Safe Work Australia categorises injuries resulting from work activity or exposure in three ways: while working or travelling for work (worker fatalities); while travelling to or from work (commuting fatalities); and as a result of someone else's work activity (bystander fatalities). For

the year ending June 2010 (fatalities only reported), there were 337 work-related deaths. Of these, 216 (64%) were worker fatalities, and of those 216, about one third (77) occurred on the road. There were 79 commuter fatalities (almost all of which are estimated to have occurred in traffic incidents) and 42 bystander fatalities (66% in traffic incidents) (Safe Work Australia, 2012a). In the 2008/09 financial year (the latest data available), the median working time lost from a vehicle incident was 5.8 weeks at a cost of $10,000, compared to an average 4.0 weeks and a cost of $7,700 for all injury/disease mechanisms (Safe Work Australia, 2012b).

### *Workplace Safety and Road Safety Management*

Work-related road safety is increasingly regarded as a vital issue for a wide range of private companies, and there are road safety management lessons to be drawn from workplace safety management. Many well-known road safety treatments fit within the notion of a hierarchy of control in workplace safety, which can be described in a variety of ways (Safe Work Australia, 2009b, and New York Committee for Occupational Safety & Health, n.d), but perhaps most simply in relation to work-related road safety management as:

- Can we *eliminate exposure* of the user to the hazard (through reducing the need for travel)?
- Can we *substitute the hazard* to the user for one with a lower risk (through shifting to a safer mode of travel)?
- Can we use technology to *safeguard the user* from the hazard (through safer road design or vehicle technology)?
- Can we put in place *training or procedures* for the user to mitigate the presence of the hazard (through setting greater expectations on behaviour)?
- Can we provide the user with *personal protective equipment* against the hazard (such as cycle helmets or motorcycle safety clothing)?

In workplace safety, this hierarchy of control is a descending list of effectiveness – the first being most effective, and the last being least effective (Safe Work Australia, 2009b, and New York Committee for Occupational Safety & Health, n.d). The preponderance of traditional road safety treatments in the last two controls (OECD, International Transport Forum, 2008), and the relatively recent boost in profile over the last ten to twenty years in the middle control is notable.

The road safety management discipline has its origins in the Haddon matrix for analysing the causes of injuries and ways to prevent them (Bliss and Breen, 2009). The framework (as applied to road traffic) is based on the host (the person at risk of injury), the agent (the vehicle causing the injury) and the environment (the road and social context in which the injury occurs). These aspects of the injury event are then considered over three time periods: the time leading up to the event, the event itself and the time immediately after the event (Haddon, 1972).

Williams (1999), when exploring the history of road safety, suggests that the matrix helped shift the focus of road safety countermeasures from being exclusively on human behaviour before the crash to countermeasures involving vehicles and the environment, both during and after the event. This has been a long change process, and the Vision Zero principles articulated first in Sweden, and increasingly adopted elsewhere, more directly challenged the ethical foundation for focussing on driver responsibility. From lessons in other transport modes, where a non-injury incident is regarded as a matter of significant safety concern and a fatality as a disaster that must never be repeated, and workplace safety, it has become increasingly apparent that management systems are critical to sustained improvement in road safety.

## Literature

This section reviews literature on vehicle and driver based initiatives in the context of work-related

road safety, focusing primarily on light vehicle fleets.

### *Vehicle Safety*

New vehicle safety technology has been responsible for significant reductions in road trauma and is expected to be the major contributor to ongoing reductions in the next two decades. A key part of this contribution is likely to be greater consumer understanding of vehicle safety. The Australasian New Car Assessment Program (ANCAP) allows fleet vehicle buyers to make informed decisions by assessing the crashworthiness and safety features of new vehicles and assigning stars based on safety performance. It has been estimated that occupants have twice the chance of being killed or seriously injured in an ANCAP 1-star rated vehicle compared to an ANCAP 5-star rated vehicle (ANCAP, 2012). From 2011, ANCAP developed a roadmap which projects forward over a five-year period the requirements for a vehicle to achieve a 5-star safety rating.

A demonstration of the effectiveness of ANCAP's consumer advocacy came when it first made electronic stability control (ESC) a requirement to achieve a 5-star rating, well ahead of government regulation. Substantial crash reductions have been reported for vehicles fitted with ESC, for example Scully and Newstead (2008), Papelis, Watson and Brown (2010), and SWOV (2010). Once ESC had become widely available within the market, but prior to legislation, corporate decisions to only purchase ESC fitted vehicles accelerated the early penetration of this highly effective vehicle technology within the overall fleet.

The uptake and acceleration of intelligent speed adaptation (ISA) is proving difficult despite considerable research (recently for example in Lai and Carsten, 2011). In 2011, Doecke, Anderson and Woolley used Australian speed crash data to estimate benefit cost ratios (BCRs) for advisory, supportive or limiting ISA. They found that, in the case of small company orders for the device, advisory ISA systems produce the best BCR due to the likely reduction in price over time. However, over a 20-year period, limiting forms of ISA constitute the best investment.

It is worth noting research that suggests drivers of fleet vehicles fitted with ISA systems should continue to drive ISA equipped vehicles as these drivers do not necessarily keep within the speed limits when they drive non ISA-equipped vehicles (Chorlton and Conner, 2012). This is perhaps indicative of the difficulty to date in generating industry uptake of this very effective technology. In an organisational context, however, effective speed management whether through ISA or other controls is likely to provide substantial crash, injury, fuel and operational savings.

There appears to be significant market potential in other important technologies, particularly forward collision avoidance systems that perform a critical safety function by autonomously braking a vehicle when an impending collision is detected. These systems have been analysed in company fleet or general contexts with strong crash and injury reduction estimates, for example in Schiittenhelm (2009) (52%), Kusano and Gabler (2010) (36%), and Rosen et al. (2010) (44%). Leaving aside ESC and ISA, the most promising crash reduction technologies were analysed using historical crash data from New South Wales in a study for their potential to reduce fatal and non-fatal injury crashes in Australia, and are outlined in Table 1 (Anderson et al., 2011).

It is important to note in the context of work-related road safety management that vehicle technology is capable of significantly reducing behavioural risks. Drink driving, fatigue and seatbelt wearing are all persistent behavioural issues within the community, and applying technological safeguards is likely to be more effective than relying predominantly on safety education and enforcement programs.

*Table 1. Top Crash Reduction Technologies in Australia*

| | Estimated annual reduction in fatal crashes | % of all fatals | Estimated annual reduction in non-fatal injury |
|---|---|---|---|
| **Forward collision avoidance** | 227 | 16% | 54305 |
| **Alcohol interlocks** | 217 | 15% | 9301 |
| **Fatigue management systems** | 150 | 10% | 9233 |
| **Forward collision avoidance for ≥ 80 km/h speed zones** | 127 | 9% | 8204 |
| **Motorcycle ABS** | 88 | 6% | 8618 |
| **Dedicated Pedestrian Detection (Daylight)** | 43 | 3% | 6711 |
| **Lane Departure Warnings** | 100 | 7% | 4177 |
| **Lane Change Warnings** | 14 | 1% | 5031 |
| **Seatbelt Interlocks** | 88 | 6% | 726 |
| **Dedicated Pedestrian Detection (Darkness)** | 54 | 4% | 2007 |
| **Seatbelt Reminder** | 71 | 5% | 580 |

In-vehicle driver behaviour monitoring systems are also attracting greater attention. Video cameras have been used to successfully improve driver behaviour among fleet drivers (Quayle & Forder, 2008). 'Black box' recorders have been reported to be very successful in improving fleet crash rates and driver behaviour, for example among light vehicle fleet drivers in Germany (ETSC, 2009) and England (Quayle & Forder, 2008), and ambulance drivers in Arkansas and Pennsylvania (Levick, 2009).

Fleet purchasing decisions play a critical vehicle safety role with over 40% of all light vehicles in Australia initially purchased as a fleet vehicle and sold to private buyers after a relatively short period (Anderson, 2012). ANCAP's roadmap also means that when an organisation makes a specific 5-star only fleet policy, the safety of the organisation's vehicle fleet will continue to improve over time. BHP Billiton now requires all its new light vehicles to have ANCAP 5-star ratings and that all light vehicles in its fleet should be of this standard by 2016. The company indicates that this policy not only ensures its fleet comprises the safest vehicles possible, but that it allows its staff to focus more on core business (Gordon, 2012).

Depending on the approach of fleet managers, vehicle safety is not always the first priority in fleet purchasing decisions, and fully evaluated world-wide case studies of successful fleet management are limited in number (Murray, Dubens & Rea, 2009). Australian fleet policies commonly focus on vehicle choice, the need to comply with financial constraints and minimising tax liabilities (Haworth, Grieg and Wishart, 2008). The ETSC (2009) notes research showing that factors such as

price, running costs, reliability, size and fuel consumption sometimes outrank safety considerations. Traditionally, fleet risk management has tended to focus on controlling costs of managing the fleet rather than on employee and public safety (Darby et al., 2011), although recent government fleet decisions across Australia suggest this may be changing.

### *Driver Safety*

Just as in other aspects of workplace safety, protective measures need to be provided for employees who are exposed to road traffic risk. Post-licence driver training programs are common fleet management provisions, however research throws much doubt on their effectiveness as fleet crash reduction measures, due to the overall limited effectiveness of driver training to produce crash reductions (Christie, 2011). A 2003 Cochrane Collaboration analysis (Ker et al., 2003) which systematically re-examined 24 previous evaluations of driver training (and remedial) programs concluded that there is no evidence that post-licence driver training is effective in preventing traffic injuries or crashes, and a similar conclusion was reached by the ETSC (2010) in relation to its analysis of work-related road safety.

Unfortunately, many post-licence training programs to focus on skill development and at an advanced level, such as practising handling skids or emergency swerve and brake techniques. There is strong evidence that these programs do not reduce crashes and in some cases may lead to worse crash rates if the drivers become overconfident of their skills through practice (SWOV, 2009; Christie, 2011). There are further problems with providing skills training to already experienced drivers, as found in many fleet settings. Providing such training may undermine driver safety by offsetting the beneficial effects of vehicle safety features – for example, training drivers in emergency braking techniques may increase their braking distance in vehicles fitted with anti-lock braking systems (Christie, 2011).

In contrast to skills-based training, some training programs focus on attitudinal or motivational aspects that influence driving, as well as higher order thinking skills, such as hazard perception, decision making and self-assessment. Christie (2011) points out that they remain unproven in changing attitude, behaviour or crash risk. However, such programs are at least often well grounded in contemporary theory in behaviour change psychology and adult educational practice.

Coaching is a different approach to traditional forms of driving instruction and this has led to a substantial European Union project which developed a training package for driving teachers focusing on best practice communication skills, especially coaching (HERMES, 2010). Effective use of online assessment among 16,000 fleet drivers in a single UK company was reported by Darby, Murray and Raeside (2009). Driver knowledge, attitude, behaviour and hazard perception, along with mileage driven, driver age and personality, were found to be ‘highly correlated with self-reported collisions’. Various driver questionnaire forms were reviewed by Freeman, Wishart, Davey and Rowland (2010). They concluded that, while such assessment tools usefully predict crash risk to some extent, much still needs to be done to refine and standardise such assessment forms and how they are used within companies.

It is important to note that Downs et al. (1999) found that measures such as incentives, rewards and safety pledges do not significantly reduce crash frequency. A more recent review (Banks, Davey, Biggs & King, 2010) found that at best the value of such measures was unclear, but that it was more likely such measures are ineffective. A positive safety culture is likely to be more useful. A case study of the evolution and nurturing of one company’s safety culture showed that it valued such things as policy awareness audits, access to drug and alcohol programs, free eyesight checks for drivers, safest driver of the year competitions, embracing community road safety initiatives (e.g. a local Road Safety Week), fitting ‘cyclist beware’ decals to fleet vehicles, and tyre and windscreen checks of employee vehicles in the company car park (Murray, Ison, Gallemore & Nijjar, 2009).

Driver safety interventions need to be undertaken within an organisation specific context. For example, some organisations require driving in demanding off-road conditions, or in vehicles that have distinct handling characteristics or licensing requirements and specific training may be necessary to address such matters. Alcohol, drugs, and fatigue can have significant effects on the productivity of an employee, and generate safety risks in a variety of workplaces. A number of safety factors associated with driving are the subject of regulation and enforcement. Staff who are driving must comply with key behavioural laws relating to alcohol or drugs, speeding, mobile phones, and restraints, but many companies go further than these legislated minimum standards and require zero alcohol or drug levels, or no use of mobile phones at all.

Banks et al (2010) also noted that a majority of the effective occupational road safety initiatives they had reviewed were employee-initiated interventions rather than organisation-initiated ones. The importance of a healthy safety culture within a company should not be underestimated, with Freeman et al. (2010) concluding that evidence is mounting that creating a positive safety culture has a positive effect on employees' driving performance, vehicle crash rates and injury severity.

## Corporate Road Safety Programs

Just as there are many different ways of describing good practice in organisational management and leadership, so there are many different ways of describing good practice in occupational safety and health management and more particularly good practice in work-related road safety management. There are considerable resources available that address work-related road safety.[1] This section addresses some of the most recent initiatives which are demonstrably based on modern road safety management principles.

### *ISO 39001 Road Traffic Safety Management Systems*

The most recent development in road safety management systems has been the publication of *ISO 39001 Road Traffic Safety Management Systems*. ISO 39001 is 'a tool to help organisations reduce, and ultimately eliminate, the incidence and risk of death and serious injury related to road traffic crashes' (International Standards Organisation, 2012). The standard was published in October 2012 and combines the quality management disciplines given effect through *ISO 9001 Quality Management Systems* with the most recent understanding of best practice road safety management.

The eventual uptake of the standard is likely to vary between and within markets, and some corporations will simply adjust the management systems they have already implemented. It appears likely however that ISO 39001 will come to be regarded as the gold standard of work-related road safety management and of corporate support for road safety within the community. For example, based on an enduring management framework, the Standard specifies the following set of safety performance factors covering those aspects of road safety which are backed by evidence of their capacity to improve road safety:

- Road design and safe speed (especially separation, roadsides, and intersections).
- Use of appropriate roads depending on vehicle type, user, type of cargo and equipment.
- Use of safe driving speed considering vehicle type, traffic and weather conditions.
- Use of personal safety equipment (restraints, helmets, lights).
- Driver fitness (fatigue, distraction, alcohol & drugs).
- Safe journey planning (need/amount/mode of travel, choice of route).

[1] The most notable early form of this appears to have been the Network of Employers for Traffic Safety in the United States of America which was established in 1989 (Network of Employers for Traffic Safety, 2012). Another example is the Fleet Forum which is a grouping of international humanitarian agencies established in 2003 (Fleet Forum, 2012). Of significant note as well is the European Transport Safety Council's PRAISE (Preventing Road Accidents and Injuries for the Safety of Employees) program funded by the European Commission to mobilise knowledge of work related road safety leadership (European Transport Safety Council, 2009).

- Safe vehicles (vulnerable/occupant protection, crash avoidance/mitigation, roadworthiness, load security).
- Appropriate authorisation for controlling different classes of vehicle.
- Removal of unfit vehicles and drivers/riders.
- Post crash preparedness, recovery and rehabilitation.

The factors will not all necessarily be relevant for all organisations, and there may be other factors which are also relevant within an organisation, but they establish a full menu of road safety factors which an organisation can address. They are far more consistent with a rigorous application of the workplace safety hierarchy of control than with previous road safety approaches which have stressed behavioural measures which are regarded in workplace safety terms as being the least effective. By going through the processes within the standard, the organisation is capable of both significantly reducing road traffic safety risk, and improving the safety on the road of the community within which the organisation exists.

### *Driving for Better Business*

The Driving for Better Business network (Driving for Better Business, 2012) involves many different public agencies and private companies to promote the business benefits of managing work-related road safety. One of the starting positions for the program is UK health and safety legislation which requires the employer 'to ensure, so far as is reasonably practicable, the health and safety of all employees while at work... (and) that others are not put at risk by work-related driving activities' (Department for Transport, 2003).

The network includes approximately 50 champions, who have logged a case study on the network's website which houses useful guidance and tools for companies to use. While considerable guidance exists in workplace related road safety, their "Essential Elements of a Road Safety Policy" is notable for aspects which are not always found in similar advice, such as the choice of vehicles. With a substantial gap in safety performance between even 5 and 4 star rated vehicles, the purchasing and leasing decisions in this area provide immediate risk reduction benefits for a company. It is relatively unusual for vehicle purchasing to be given such prominence, with vehicle safety advice often directed solely at the relatively less important maintenance aspects.

This guidance also gives atypical prominence to journey planning, which merits further consideration and research particularly as it addresses critical aspects of the workplace safety hierarchy of control in relation to road traffic risk: reducing the need for travel; using the safest travel modes available; using roads with the greatest level of protection; and driver management issues such as fatigue.

Issues such as fatigue management are obviously important, but the higher order issues associated with journey planning also connect easily with other key cost drivers such as effective use of time and consumption of fuel, as well as environmental imperatives to reduce greenhouse gas emissions. As safety rating information continues to develop, the use of International Road Assessment Program (iRAP) protocol may also support better route choice. Even now some principles can be applied to urban travel, for example, for which a descending order of safety may be: motorways which are fully divided and grade separated; major arterials which have divided carriageways and limited access points; and other arterials where signalised intersections have fully controlled right hand turns and parking is controlled.

### *National Road Safety Partnership Program*

In 2011 the National Transport Commission (NTC) 2011 released a public discussion paper to advise on the development of a draft national strategy for corporate road safety. The discussion

paper sought to identify actions that companies can themselves identify and implement to improve occupational safety, without waiting for government intervention or regulation change. Key features of the new draft strategy include the potential for corporate partnerships to improve occupational road safety and the importance of corporate social responsibility or safety culture (NTC, 2011 and Potter, 2012).

This program can be seen as a successor to other programs within Australia, such as that set up by the Office of Road Safety in Western Australia (2012), and there are many other organisations which offer commercial or membership services in relation to work-related road safety who have a long standing interest in the area. A good example is the Australasian Fleet Managers' Association who provide direct safety guidance in the area, and also promotes best safety practice through its annual awards program.

A subsequent draft strategy document released in August 2012 was endorsed by a steering committee of 19 organisations, mostly private companies.[2] A finalised document was released in June 2013. All of the businesses involved in the NTC sponsored project have, to some degree, been engaged in developing a shift towards a road safety culture, and have described the following benefits from this shift:

- A reduction in fatalities and serious injuries.
- A reduction in fuel use (7–12 per cent), which correlates to a reduction in vehicle emissions.
- A significant reduction in WorkCover claims and insurance premiums.
- A reduction in fleet maintenance and overall operating costs.
- An increased fleet life expectancy.
- A reduction in vehicle accidents and rollovers.
- An inclusion of road safety parameters within the issuing of contractual requirements.
- A change in attitude, so that road safety becomes a standard component of Toolbox Talk (safety team discussions at the start of the shift) for general workers on site.
- An increased staff retention and a desire to work for the business.
- Provision of direct feedback to vehicle manufacturers to address safety concerns of a vehicle.

There are direct cost savings to the company associated with better and safer management of road traffic risk within a company. Less tangible, but still real, are the reputational and brand benefits in associating the company with the enduring value of safety both within the workforce and wider community.

### *Fleet Safety Managers' Discussions*

In order to gain further insight into work-related road safety policies and practices in Australia interviews were conducted with representatives from a range of organisations. The aim was to discover how different organisations view work-related road safety and what policies and procedures have been implemented. Discussions were held with the fleet manager or occupational health and safety manager of six organisations including a road authority, a major bank, a large energy company, a motoring organisation and a fleet management company, with the agreement that they would not be individually identified. While the organisations were all large, and can not be regarded as representative of small and medium enterprises, the range of sectors allowed for a variety of organisational interests in work-related road safety.

[2] The steering committee comprised of the National Road Safety Council (Chair), National Transport Commission (Secretariat), Australian Automobile Association, Australian Local Government Association, BHP Billiton, Blue Care, Coca Cola Amatil, GM Holden, Hanson Construction, Linfox, Origin Energy, Rio Tinto Iron Ore, Shell, Suncorp Vero, Telstra, Toll Group, Volkswagen, Wes Wesfarmers Insurance, and Zurich.

The discussions were held either face to face or over the phone, and guided by a checklist of issues. Specific issues addressed were:

- Road safety context of the organisation.
- Leadership and safety culture.
- Key safety risks being managed.
- Fleet management and vehicle safety policy.
- Safe driving policy, training and education.
- Road safety policy.

Some participants subsequently forwarded documents for clarification, and all reviewed the written reports that were prepared for accuracy in relation to their organisation.

Positive advances in workplace road safety identified from the discussions included:

- Companies have made progress in accepting that the safety of the employees on the road is an important component of their occupational health and safety (OHS) response.
- Road safety is gradually being integrated into the wider OHS management system.
- Most companies have a policy of purchasing 4 or 5 star vehicles for their passenger car fleet.
- Vehicle choice for light commercial vehicles is more difficult because of the limited range of vehicles available.
- Journey planning including car pooling, avoiding high risk times or location, taking rest breaks and using other travel modes is important to many companies.
- Larger companies are gaining benefits from questioning the need to travel and replacing travel with video or other technology.
- Road safety policies are in place addressing issues such as alcohol and drug use, speed and mobile phone use.
- Road safety policies can be strengthened with systems that monitor and respond to non-compliance.
- Road safety policies need to be regularly reviewed and audited.

The respondents identified areas where more improvements could be made, including:

- Extending the mandatory use of 5 star vehicles to all cases including light commercial vehicles.
- Further reducing the amount of driving required with greater use of technology.
- Reducing driving in high-risk situations.
- Banning the use of mobile phones.
- Increasing the safety information available to employees by a range of methods including e-learning.
- Recognising that road trauma is a social, human, financial, reputation, efficiency and operational risk to an organisation and needs to be given priority at all management levels.

There was also awareness of the need for a strong safety culture lead by senior management and in three cases with direct involvement from the Board of Directors. Ongoing management interest and follow-up particularly when policies were not adhered to was demonstrated in a variety of ways including two organisations introducing a system where minor traffic infringements result in a one-on-one discussion with a senior manager. It is highly likely that such actions lead to positive safety impacts throughout organisations.

## Priority Actions and Summary

A review of the literature on vehicle and driver safety interventions available to organisations in

order to improve their work-related road safety effort, and of best practice corporate road safety programs, suggests the following priority actions for an organisation seeking to improve work-related road safety:

- Calculate the company's exposure to risk and impact of crashes and injuries through measures such as distance/mode of travel and number/cost of crashes and injuries to assess progress over time.
- Gain top management commitment to substantially reducing its road traffic safety risk, clearly mandating a senior person within the company to drive a risk reduction program.
- Undertake and document a road traffic risk assessment identifying and assessing the likelihood of hazards across journey planning, vehicles and users.
- Identify and prioritise road traffic risk reduction interventions based on established workplace safety management principles, seeking first to eliminate the hazard, then substitute it for a lesser hazard, then put technological safeguards in place.
- Identify current rules for planning and undertaking journeys on the road and then determine potential gaps in how risks are being reduced.
- Reduce the need to travel, or reorganise schedules to reduce the volume of travel which may reduce financial and environmental impacts as well as exposure to safety risk.
- Establish controls around use of the road network using higher volume, higher quality routes where safety protection is likely to be the highest.
- Establish an inventory of light and light commercial vehicles to improve the management of the fleet asset and assess the relative safety level of the fleet to be made.
- Plan for any necessary upgrade to the vehicle fleet to make use of full range of ANCAP 5 star safety rated vehicles across light and light commercial market segments.
- Upgrade the purchasing policy to include proven safety features not currently required in the 5 star ANCAP rating, such as autonomous emergency braking.
- Assess current road safety advice/training/directives to company drivers to ensure safety expectations are communicated through induction and refresher mechanisms, and supported by direct personal feedback in the normal employment relationship.
- Review and be prepared to change driver education programs so as to avoid (unless specifically necessary) acquisition of car-control skills, and to focus on acquisition of higher order skills such as risk awareness and self management in the driving environment.
- Establish simple audit and monitoring systems with data that is meaningful to the company being analysed and reported by line managers charged with reducing safety risks.
- Establish simple feedback and consequence measures to reinforce the purpose of policies with the support of top management.

The cost of these priority actions will vary depending on the nature of the company and the extent to which it has systems in place to control work-related road crash risk, but many key elements of improving work-related road safety rely on the simple application of good management practices. There will be a cost in reviewing risks, and also in introducing new technology, but a safety analysis may also highlight opportunities to reduce or contain costs, in travel or vehicle operations for example.

Companies wishing to reduce the risk of their employees on the road should, firstly, reassess the need for travel; secondly, reorganise work journeys to reduce exposure to risk or use lower risk journey options; thirdly, invest in the upfront safety quality of vehicles that are being used; and fourthly, engage their staff about risk management on the road as they would engage them about anything in the workplace which directly affects the performance of the company. Ideally, these actions should be managed within a standard management cycle of establishing direction, implementing plans, monitoring progress, and looking for opportunities to improve. This requires a

person to be tasked with coordinating activity and working with line managers to ensure that the company's objectives in the area are being met.

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