

Promoting safer vehicles in Victoria – recent developments.

Tierney, P.¹, McArthur, R.², Mulholland, E.¹, Cockfield, S.¹ & Healy, D.¹

¹ Transport Accident Commission
222 Exhibition Street
Melbourne, Victoria 3000
Ph: +61 3 9664 6954 Fax: +61 3 9664 6700
paul_tierney@tac.vic.gov.au

² VicRoads
60 Denmark Street
Kew, Victoria 3101
Ph: +61 3 9854 2642 Fax: +61 3 9854 2668
ross.mcarthur@roads.vic.gov.au

ABSTRACT

Since the European Transport Safety Council (ETSC) established that fatalities across Europe would halve if every motorist upgraded to the safest vehicle in its class, the Victorian road safety partners have considered enhanced vehicle safety to be of significant importance in the State's road safety strategy. This has been reflected in the Victorian Government's Vehicle Safety Strategy and Associated Action Plan 2004-2007. Some of the key objectives established under this strategy, include:

- Informing the community about why vehicle safety matters;
- Building organisational and consumer demand for safer vehicles by effectively marketing the benefits; and
- Gaining commitments from fleet operators to improve the level of safety provided in vehicles for employees.

This paper outlines the Government's current vehicle safety strategy with a specific focus on current and future initiatives. These include evaluation of key technologies, research and development, and communication programs. Annual monitoring of Victorian motorist attitudes shows that safety has moved from the fifth to second most important feature when purchasing a vehicle. Importantly, using an evidence based approach, the impacts on road trauma of the strategy and its associated actions are discussed.

1.0 BACKGROUND

The Victorian Government road safety partners (Transport Accident Commission, Victoria Police, VicRoads, Department of Justice), along with other key partners such as the RACV, support the 'safe system' approach to road safety.

This approach reflects the future direction for road safety in Victoria, recognising that not all accidents can be prevented. Therefore, the road system should be designed

and built to protect road users and reduce the harm caused when a crash occurs. It emphasises the way the different elements of the road transport system interact, with the longer term objective that no-one should lose their life if the necessary safe system elements are in place. The key elements of the approach are: safer roads, safer road users, and safer vehicles (VicRoads, 2005).

This paper deals with the Victorian Government's approach to the third of these elements – safer vehicles.

1.1 Safer vehicles

One of the key elements of the safe system approach is to improve the safety of all models of passenger vehicles in everyday use. Increasing the proportion of vehicles on our roads with high quality active and passive safety features can achieve significant reductions in road deaths and injuries in Victoria and the rest of Australia. As an indication of what is achievable, the European Transport Safety Council has estimated that if every motorist upgraded their vehicle to the safest in its class (e.g. medium to medium, large to large), road deaths across Europe would drop immediately by as much as 50 per cent.

Australia has one of the highest levels of motorisation in the world and this reliance on the motor vehicle should demand that the highest possible safety design and performance standards are provided in Australia's vehicle fleet. Road crashes in Australia cause approximately 1,600 deaths and 22,000 serious injuries each year (Australian Transport Safety Bureau, 2005). The result is untold pain and suffering together with an economic loss to the nation of an estimated \$18 billion annually (Bureau of Transport Economics, 2000; figures indexed using CPI).

Despite having led the world with many road safety initiatives, Australia is behind other developed nations in the adoption of proven safety features in cars which could significantly reduce road trauma. To achieve further reductions in the road toll it is paramount that manufacturers, government agencies and consumers - especially fleet buyers - work together to raise the standard of vehicle safety in Australia.

While the specification of vehicle safety standards for new vehicles is a national responsibility, the road safety partners recognise the role that market forces can play in promoting safer cars on our roads. For this reason, *Victoria's Vehicle Safety Strategy and Associated Action Plan 2004 – 2007* (VicRoads, 2004) was developed (see Figure 1).

1.2 Victoria's Vehicle Safety Strategy and Associated Action Plan 2004-2007

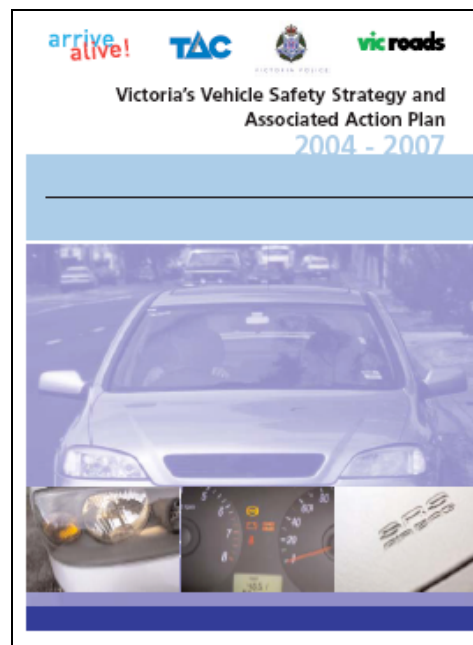
Victoria's Vehicle Safety Strategy and Associated Action Plan (the strategy) provides the rationale, key objectives and initiatives that Victoria's road safety agencies (in partnership with others) will use to improve vehicle safety. This action plan sits within the broader framework of Victoria's road safety strategy *arrive alive!*

Listed below are six key objectives of the strategy:

1. Informing the community why vehicle safety matters;

2. Building organisational and consumer demand for safer vehicles by effectively marketing the benefits;
3. Gaining commitment from fleet operators to improve the level of safety provided in vehicles for their employees;
4. Inducing vehicle makers to provide much higher levels of safety in all vehicle models;
5. Improving the levels of maintenance of safety systems in existing vehicles; and
6. Ensuring an appropriate knowledge base exists in Victorian road safety agencies concerning vehicle crash performance/safety features.

Figure 1. Victoria's Vehicle Safety Strategy and Associated Action Plan



Clearly there is some degree of overlap of the objectives and the actions sitting under them. Some of these actions will be discussed in this paper.

2.0 INFORMING THE COMMUNITY & BUILDING DEMAND

One of the most important means of instituting change for any road safety issue is to place it on the community agenda. With regard to vehicle safety, consumers can play a key role in influencing what manufacturers supply to the market. In basic terms, manufacturers will sell what their customers want to buy. Therefore, the challenge is to ensure consumers are well informed about vehicle safety, why it is important, and the differences it can make to their safety and that of their families. In doing so, the aim is to create the mindset that safety is not an “optional extra” and consumers must demand that manufacturers not treat it as such. Through consumer demand for the safest vehicles, it is envisaged that manufacturers will react appropriately to these market forces. Along with this greater demand will come a reduction in the “price for safety”.

2.1 The Australian New Car Assessment Program & Used Car Safety Ratings

Making vehicle purchasers, and in particular fleet buyers, more aware of the crashworthiness of local and overseas vehicles is central to the strategy. However in order to do this, the partners require comparative information about the safety of vehicles to better inform buyers when making vehicle purchases. Two separate rating systems exist which provide a guide as to the crashworthiness of a vehicle - the Australian New Car Assessment Program (ANCAP), and the Used Car Safety Ratings (UCSR).

The ANCAP uses crash tests to see how well new vehicle models protect their occupants in serious crashes. Crash tests simulate two of the most frequently occurring types of collision - an offset frontal and a side impact or high ride (4WD) vehicle pole test. The UCSR, on the other hand, are compiled by the Monash University Accident Research Centre (MUARC) and are based on real world crashes and provide a picture of the car's safety performance. In essence, ANCAP ratings help provide information to assist in new car purchases and UCSR information in second-hand purchases. In this regard it is noteworthy that seven times as many used cars are purchased as new ones (Transport Accident Commission, 2005).

Analysis undertaken by MUARC has shown that there is a strong correlation between the ANCAP crash test results and the vehicle's real world performance as measured in the UCSR. This indicates that both rating regimes provide reliable and valid information about the relative safety of vehicles and it is for this reason that VicRoads and the TAC have joined with the RACV, AAA, and other interstate Government agencies to support these programs as part of its vehicle safety strategy.

The partners capitalise on the release of test results to communicate to relevant stakeholders to ensure that crash ratings are more widely understood and available. This is done through paid (e.g., advertising) and unpaid (e.g., press releases) media opportunities.

2.2 Public Education

The use of public education strategies is critical to help inform the community about why vehicle safety matters. The TAC's HowSafeIsYourCar (HSIYC) website and related communications are at the centre of Victoria's public education initiatives. The HSIYC website (see Figure 2) is designed for people who are buying a new or used car and want to compare the crashworthiness ratings of various makes and models. It provides information for approximately 80% of vehicles built post-1990 that are on Australian roads, and uses ANCAP and the UCSR to assist consumers in making a choice for their next vehicle purchase (Transport Accident Commission, 2005).

The HSIYC message targets all drivers but also provides a unique opportunity to talk to key influencers of vehicle purchase - women aged 25 years and over.

Figure 2. The www.howsafeisyourcar.com.au website



The website is advertised using mass media including television, radio, press, online and outdoor (see figure 3). In addition, new media channels have been employed including the use of in-program content in television programs such as *Melbourne Woman*. More traditional television and radio media sponsorships through AFL football opportunities are also used to promote the message.

Figure 3. Example of HSIYC advertising



Finally, the campaign is used as the key message for targeted partnership opportunities such as CityLinkPlus, a rewards program for City Link (i.e., Melbourne's Tollway) customers that provides value-add offers for CityLink's account holders. This provides the opportunity to reach approximately 650,000 Victorians.

2.3 Investigating and promoting new technologies

Two objectives from the strategy combine to ensure that an appropriate vehicle safety knowledge base exists in Victoria which can consequently be used to encourage vehicle suppliers to provide safer vehicles. Acquiring such vehicle safety knowledge can involve obtaining information about new, currently available technologies, and researching and developing the next generation of safety systems.

Technologies of today

Vehicle safety features designed to prevent crashes or reduce the likelihood of serious injuries are very important considerations in vehicle design. Crash prevention features help the driver maintain control of the vehicle in emergency situations and

injury prevention features protect the driver should a crash occur. Seatbelts and airbags are two very significant injury prevention features which have been implemented in vehicles and have had a huge impact on trauma outcomes.

However, more recently, electronic stability control (ESC) and head protecting side airbags have been identified as technologies likely to make a huge impact on the incidence and severity of road trauma. These two safety features are strongly endorsed by the road safety partners and are seen as worthy of heavy promotion.

ESC is an on-board car safety system, which enables the stability of a car to be maintained during critical manoeuvring and to correct potential under or over steering (Lie, Tingvall, Krafft & Kullgren, 2005). Several studies cited in Lie et al. (2005) have demonstrated the effectiveness of ESC in real life crashes. A Swedish study showed the effectiveness of ESC as ranging between 20 and 40 per cent, with a German study showing a similar effect. American studies have also shown major effects of ESC with preliminary NHTSA results showing a 35 per cent reduction in single vehicle crashes for passenger cars, and a 30 per cent reduction for fatal single vehicle crashes. Corresponding figures for SUVs were 67 per cent and 63 per cent respectively (Lie et al., 2005).

Head protecting side airbags have a huge potential to significantly improve the protection of both front and back seat passengers in side impact collisions which are often extremely severe. They provide clear benefits in mitigating head injuries in collisions particularly with stiff vertical road-side objects such as trees and poles, and provide protection against impacts by vehicles with high fronts, such as SUVs (Coxon, Paine & Haley, 2005).

The base models of all new cars sold in Australia must comply with specified performance standards, but these are minimum requirements. They do not ensure the adoption of proven technologies such as ESC and head protecting side airbags although fitted by some manufacturers. It is for this reason that one of the actions within the strategy is to engage and challenge vehicle suppliers to adopt new vehicle safety technologies linked to significant safety outcomes.

Technologies of tomorrow

The TAC has recently completed an extensive on-road trial of a series of in-car Intelligent Transport Systems (ITS) technologies. Conducted in conjunction with the MUARC and Ford Australia, the *TAC SafeCar Project*, is the first time that these types of safety-related ITS components have been brought together in one vehicle. The aim of the project was to gauge user acceptability and to track their individual and combined effect in reducing road trauma.

Fifteen specially equipped vehicles were operated by 23 drivers in nine public and private company fleets. The SafeCars were fitted with Intelligent Speed Adaptation (ISA), following distance warning, and a Seatbelt Reminder (SBR) system. Each car was also fitted with daytime running lights and reverse collision warning systems.

Overall the study concluded that the systems had significant road safety benefits. In particular, ISA reduced speeds and speed variability in most speed zones – without

increasing travel times or fuel consumption. Two papers presenting more detailed results of the TAC SafeCar trial are being presented at the 2005 Australasian Road Safety Research Policing Education Conference. There is strong support for the progressive adoption of these new safety technologies in Australia's vehicle fleet in the near future.

In addition to the TAC trial, VicRoads has also been field testing a variant of the ISA technology.

Although not yet commercially available, systems such as ISA are technologically mature enough to be implemented. Again the Victorian partners see influencing market forces as the most effective way of accelerating the introduction of such technologies into Australia's fleet.

2.4 Consultation with vehicle industry

A key activity is to implement a new road safety communication program engaging and challenging vehicle suppliers to be clearly adopters of identified new vehicle safety technologies. One of the actions undertaken by VicRoads as part of this activity is to promote safety features to the industry through direct consultation. Opportunities to do this are presented through its involvement in the ANCAP program which involve briefings of Federal Chamber of Automotive Industry (FCAI) members and through regular meetings with Victorian based manufacturers.

3.0 THE ROLE OF FLEETS

The importance of the consumer's role in the Strategy has been highlighted. Collectively, one of the largest consumers of new vehicles is company fleets. Company fleets purchase approximately 60 per cent of all new vehicles sold. Although, having diverse business interests, all employers – whether their business is large or small - have in common a legal and moral responsibility to look after the safety of their staff. Part of this 'duty of care' within the framework of the Occupational Health and Safety Act is to ensure the safety of employees on the roads if their job requires any driving.

This is important because road crashes are the most common form of work-related fatalities, injuries and absence from work in Australia, with studies showing that one quarter of all company vehicles in Australia are involved in a crash each year (Haworth, Tingvall & Kowadlo, 2000).

Obviously no employer wants to have one of their staff killed or injured in a crash, but the costs of crashes to companies can be substantial – both in human and monetary terms. Some of the financial costs of work-related road accidents are superannuation, unplanned absences, vehicle costs and payments to third parties. It makes sense that companies do their best to reduce the likelihood of crashes to keep vehicle insurance premiums and repair and maintenance costs down (Transport Accident Commission, 2005a).

It is for this reason that the partners see fleets as drivers of change in vehicle safety standards in Australia. Various motivating factors provide a strong need for safer

vehicles amongst fleets and collectively they can influence vehicle suppliers to provide them. One of the key activities of the Strategy is to make vehicle purchasers, particularly fleet buyers, much more aware of the benefits and availability of best practice vehicle safety technologies, and demonstrate why these are good for business. VicRoads and the TAC both have vehicle purchase policies which specify the minimum safety standards that cars must possess to be used by the organisations. These policies along with templates are made available to fleets with encouragement to construct their own, similar policies.

5.0 KEY INDICATORS

There are several measures that are used to track the success of the Strategy in Victoria. On an annual basis the TAC undertakes an extensive survey of road users' self-reported behaviours and attitudes to key road safety issues. As one of its measures, this Road Safety Monitor explores those features consumers consider the most important when purchasing a new car, e.g. price, safety, make and model. In 2001 when the survey was first conducted, safety was rated as fifth (unprompted) on the list of most important features. It was subsequently elevated to second in 2002 through to 2004. It is interesting to note that in the current climate of escalating fuel prices, the most recent survey in 2005 shows safety having dropped back to number three behind price and fuel economy. Awareness that information about vehicle safety exists has increased slightly, and awareness of the HSIYC website has doubled. In the last 12 months user visits to the HSIYC website has increased by 200%.

With a positive shift in consumer attitude and awareness of safety, a corresponding shift in the average safety of new vehicles sold has also been observed. From 2001 to 2004 in the average points awarded in vehicle crash testing increased from 21.2 to 26.0 (i.e., a rise of 23 per cent). Similarly the average star rating over this time period, weighted according to sales volume, has increased from 3.5 stars to 4 stars.

6.0 CONCLUSION

Safer vehicles are a critical element in implementing and achieving a 'safe system'. Based on international estimates and observations, increasing the proportion of the vehicles on our roads with high quality primary and secondary safety features can achieve progressive and significant improvement in Victoria's road trauma levels.

However, to achieve further reductions in the road toll it is paramount that manufacturers, government agencies and consumers - especially fleet buyers - work together to raise the standard of vehicle safety in Australia. The Victorian Government road safety partners have identified key objectives, activities and actions to proactively stimulate change through its published strategy.

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