

Victorian Community Road Safety Partnership Program

DRAFT

Helping Communities Access Safer Cars Guide

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Background

A new arrangement has been established to develop and deliver effective community road safety programs in Victoria. The new arrangement consists of two main parts - a Victorian Community Road Safety Alliance, a central, strategic group with membership drawn from relevant government departments, other interested organisations and the community, and a number of registered Local and Statewide Community Road Safety Groups.

While the former provides strategic guidance and a program funding mechanism, the latter are responsible for developing and delivering effective locally-targeted community road safety programs.

A set of guides has been prepared to assist Local and Statewide Community Road Safety Groups to develop, deliver and evaluate programs that draw upon “best practice” approaches while tailoring the program to local community needs and resources.

Included in the set of guides is this one which has as its focus the need to help the community gain access to safer cars – cars that can help avoid a crash or, in the event of a crash, help reduce the severity of injuries arising from the crash.

Road Safety Context

It has been a long standing commitment of state and local government, agencies and the community to improve road safety for all Victorians.

The Safe System addresses all elements of the road transport system, and provides a systematic approach to improving the safety of Victorian road users.

The Safe System focuses on three key components:

- Safer roads and roadsides
- Safer road users
- Safer vehicles

This guide has been developed to help community members tackle one key component of the Safe System approach - the vehicle.

Aim of the Guide

The guide has three main aims:

- to help build an understanding of how the features of cars can help to avoid a crash or avoid serious injury in the event of a crash
- to assist community members in locating up-to-date information on the safety features and performance of new and used vehicles
- to provide community members with ways in which they can help accelerate the rate at which the community, and especially the most vulnerable, can gain access to safer cars.

Introducing the topic of vehicle safety

Victoria has a proud history of promoting safer vehicles. Its most notable change was when seatbelt wearing became compulsory in December 1970 – Victoria was the first jurisdiction world-wide to introduce this legislation and many others have trodden the same path since. Throughout the seventies, a number of changes were made through Australian Design Rule changes nationally that demanded that new cars sold on our roads had to have features such as door strengthening panels and high-mounted rear brake lights.

These changes were introduced in Australia to help better protect road users when using the road network. More recently, a global car market is developing and international harmonisation aims to build consensus across the automotive industry in terms of what safety initiatives should be introduced. It is much more difficult currently for Australia to take the lead and demand safety changes that will help improve the safety of our vehicles.

The challenge for all of us now is to help create demand for new safety features and to help ensure that the safest cars get into the hands of consumers, and especially the most risky sub-groups, as quickly as possible.

Why is it important to focus on Vehicle Safety?

Monash University Accident Research Centre (MUARC) estimates that:

If we all changed overnight from our current vehicle to the safest vehicle in our class (ie. small to small, medium to medium and so on), that the number of deaths on our road would drop by about a third starting the following day!!

This is an astonishing finding and highlights the tremendous potential there is in making sure our drivers have access to the safest cars. Of course, these changes do not happen overnight but it does emphasise the importance of increasing, as best we can, the number of safer vehicles appearing on our roads and consumers choosing the safest option when they purchase a new or used car.

How do vehicles protect you from death and injury?

There are two main ways in which vehicles can help prevent you, the road user, from being killed or seriously injured on our roads:

1. Preventing a crash from occurring - this is called "active" safety and includes such measures as high-mounted rear brake lights, electronic stability control and emerging technologies such as fatigue warning systems and adaptive cruise control.
2. Protecting you in the event of a crash - this is called "passive" safety and includes such features as the seatbelt, airbags, crushable bonnets and pop-up bonnets to protect pedestrians in a collision.

Historically, it has been the passive safety features that have made the greatest contribution to the improved safety of vehicle but, more recently, active safety measures are making their mark.

So what are the important safety features?

We will not consider many features that we now take for granted which will appear in most cars, including seatbelts, frontal airbags and high-mounted rear brake lights, but will focus instead on the new, emerging technologies.

Active safety features

Electronic stability control (ESC) – an important technology which will be mandatory in most new passenger cars in Victoria, commencing January 2011; the system provides differential braking to each wheel to help stabilise the vehicle in the event of it losing control and to direct it along the intended path; evaluations have shown this device can be very effective in reducing the number of run-off-road crashes and, especially so, for vehicles with high centres of gravity such as 4WDs.



Alcohol ignition interlocks - a technology that is increasingly being deployed in Victoria as a condition of re-licensing for drink-drive offenders; the system requires the intending driver to blow zero blood alcohol (although the blood alcohol level can be set at different levels) before the vehicle's ignition can be engaged. The normal setting is that the device will ask for at least one re-test some time after the car has been started. Research shows that this device is effective while fitted and potentially may find a broader market for voluntary use including parents of teenagers with access to their car.

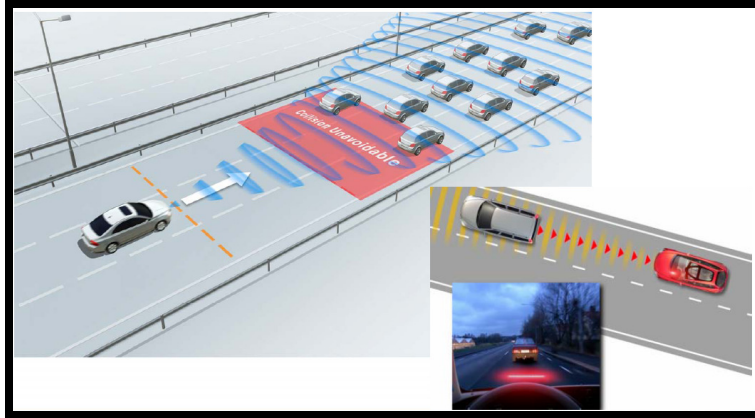


Intelligent Speed Assist (ISA) - a technology with high potential that uses GPS tracking and an electronic map of the road network with speed limits to advise the driver of the prevailing speed limit and whether the car is exceeding that speed limit; some versions of ISA can provide "push-back" on the accelerator pedal while others can limit the vehicle to operate within the speed limit. These devices have been trialled effectively in Victoria and a version of the system is now available in the BMW 7 series that also uses cameras to identify and read speed limits signs on the roadside.



Fatigue monitoring - these can vary in how they work but a version is now available in select cars (for example, the Ford Mondeo Titanium) which is based on steering wheel tracking and lane departure warning.

Autonomous braking - an important safety measure that uses sensors to determine that an object or vehicle is fast approaching; if no action is taken by the driver, then brakes will deploy automatically; Volvo has introduced "City Safe" on some models that will deploy in traffic when travel speeds are 30 km/h or less.



Lane departure warning - uses cameras to detect when a vehicle is drifting from one lane to another without an indicator being activated; only available at premium end of market currently.



Adaptive cruise control - uses sensors to keep your vehicle a safe distance from the vehicle in front; only available at premium end of market currently.

Pedestrian avoidance systems - uses sensors to detect a pedestrian in the vehicle's path and can initiate a warning to the driver that, if unheeded, will lead to automatic braking being activated; beginning to appear in select models at the premium end of the market. It features as an option for the new Volvo S60.

Passive safety systems

Side curtain airbags (SCA) – an important safety feature that can halve the risk of death in side-impact crash; a curtain airbag deploys from the runner above the car doors which acts as a cushion to the occupant's head when struck from the side; there has been a strong promotional push in Victoria with numbers of new cars with SCAs increasing;

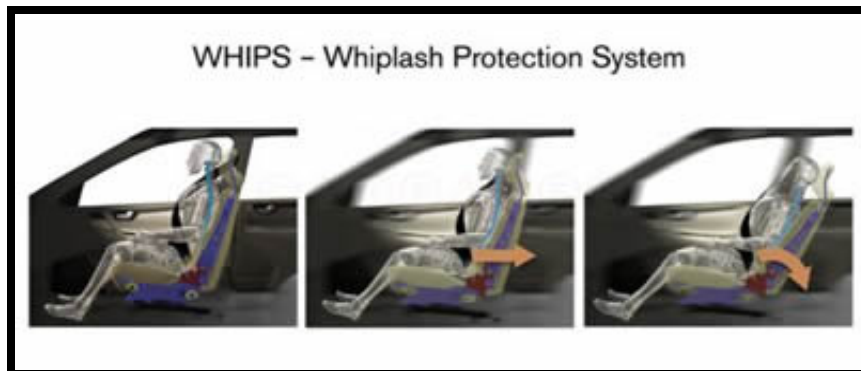


Pop-up bonnet – a feature that, in the event of an impact with a pedestrian, will cause the bonnet to pop up by a small amount to provide a more forgiving surface against which the pedestrian's head will strike; very few vehicle models provide this option currently.



Crushable bonnet - increasingly a feature of cars; the crushable bonnet will absorb much of the energy that has to be dissipated in a crash; an important companion to the crushable bonnet is the cabin compartment that stays intact and so protects the occupants from cabin intrusions that can give rise to very serious injuries. The more energy absorbed by the vehicle's structure during a collision, the less energy is available that may be absorbed by the vehicle occupants; it is this energy absorption that results in serious injury or even death.

Active head restraints - a system of head restraints that reacts sympathetically to the forces on the head and the neck during a crash to minimise the potential for excessive extension or rotational forces on the neck that can give rise to injuries such as whiplash.



Seatbelt pre-tensioners - a system that senses that the first pulse of a collision and, as a result, will tighten the seatbelt to minimise the risk of “spool out” of the belt that could result in the vehicle occupants striking their heads against the vehicle dashboard or even the windshield.

Seatbelt reminders/interlocks - a device that reminds you (or prevents vehicle ignition) that one or more occupants’ seatbelts are not being worn. A visual and auditory warning is provided and, ideally, would continue until all belts are being worn; given that approximately 20% of vehicle occupants killed on Victoria’s roads are unrestrained, a simple device like this could provide strong safety benefits.

The above list of safety features is by no means complete but does cover a range of important technologies that are now or will be contributing to our safety on Victoria’s road network. The challenge is how to accelerate their introduction to ensure that the community benefits from them sooner rather than later.

But how do I know if a car is safe or not?

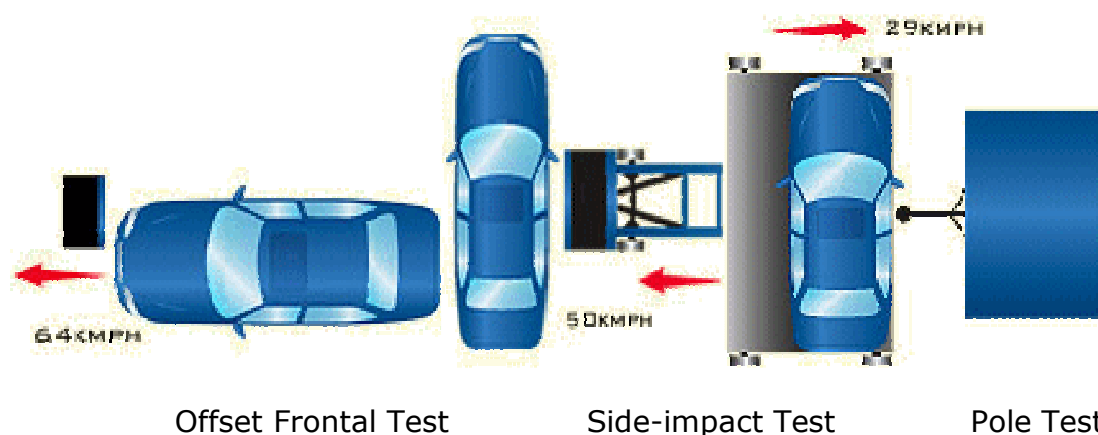
If you are searching for a car to buy or encouraging others to do so, you can usually find out the technical specification of the vehicle from the manufacturer’s website. This will tell you what technologies are available on the vehicle model - many of which may be from the list of safety technologies listed above.

This is very helpful information and can definitely assist you in making a decision, but does not give you an overall appraisal of the safety that the vehicle offers to occupants and to other users of the road network.

There are two main ways available of assessing how safe a car is – one relates to new cars and one to used cars.

Australian New Car Assessment Program (ANCAP)

ANCAP, which is funded by a consortium of government and automobile associations, crash tests new cars, awards them a star rating for safety and then publicises the results to help consumers make safe purchasing decisions. The crash tests are chosen to represent two common types of crash – the head-on and the side impact collisions. An instrumented dummy in the vehicle is wired up to allow the forces during the collision that are applied to the head, the chest and legs to be measured. If a car performs well in both these tests and has head-protecting side airbags fitted, then the manufacturer may choose to have a “pole test” conducted. This test simulates hitting a tree or a pole side-on at 29 km/h. This test can earn additional points that will go towards assessing the overall star rating.



In order for a car to achieve five stars, it needs to score at least 32.5 out of a possible 37 points and, as from 2008, the car model will need to have electronic stability control (ESC).

Because the testing procedure is an expensive one, ANCAP chooses for testing those makes and models that are proving to be the most popular among the motoring public. So, although the number of vehicles tested is limited in any one year, they represent a high percentage of vehicles purchased.

Importantly, manufacturers are increasingly referring to ANCAP ratings in their marketing campaigns - a positive sign that “safety” is increasingly being seen as an important “selling point” for buyers of new cars.

Further information on the ANCAP testing and the ratings themselves can be found at:

howsafeisyourcar.com.au
roads.vic.gov.au
ancap.com.au
racv.com.au

Used Car Safety Ratings

Community members who cannot afford to purchase a new car (and this includes young drivers) now have evidence-based guidance to help them make a safe choice in their price range.

Used Car Safety Ratings are also a very important measure as it relates to the great majority of cars on our roads - used not new cars. It differs from ANCAP as the rating is based on the real-world crash performance of cars on the road in a huge number of crashes – over five million police-reported crashes in Australia and New Zealand between 1987 and 2008 where someone was killed or seriously injured, or the vehicle was towed away.

Monash University Accident Research Centre (MUARC) has applied statistical models to this crash data to determine an overall rating of how well cars protect not only occupants but also other road users in the event of a collision. In other words, it is a total measure of the level of safety that a car provides. It is important note that the modelling takes into account the types of crash that occurs and who is involved in the crash.

This information is very helpful in assisting buyers to purchase a safe used car.

Further information on the Used Car Safety Ratings, please refer to the following websites:

howsafeisyourcar.com.au

roads.vic.gov.au

racv.com.au

Attachment A: The first car list

What can community groups do?

Community groups can play a very important role locally to help get private and commercial drivers into safer cars. A brief description of some ideas that can be conducted locally to help make a genuine difference to safety on our roads follows:

Promoting the need for community members to choose the safest new and used cars

This is a critical area; Victorian cars have a lifespan of about 20 years so the decision a purchaser makes can influence safety outcomes long into the future; community groups can work with media to promote the availability of information to help community members make safe purchasing decisions; promotional messages can include:

- the safest, new cars are some three times safer when compared with the least safe, oldest cars on our roads
- put safety on the top of your shopping list when purchasing a new car
- specific information on the safety performance of car makes and models can be found on www.howsafeisyourcar.com.au and www.ancap.com.au
- if overnight, we all changed over from our current car to the safest car available in our class (small with small, large with large and so on), then the number of deaths on Victoria's roads would drop by a third as of the next day!
- It is important to note that safety ratings are available for the most popular used cars. and not just new cars; see the Used Car Safety Ratings on above websites
- If you should have two cars in the household, make sure that your novice driver gets access to the safer one
- Before you buy a new car, check out how it stacks up in a crash ; look up www.howsafeisyourcar.com.au
- Encourage local car showrooms to promote the safest cars in their fleet and have available ANCAP brochures that provide the star ratings for their showcase vehicles; promote the service the showroom offers to the consumer who pays a visit
- Encourage local new car showrooms to agree to display stickers on their four and five star ANCAP tested cars and become part of the "Stars On Cars" program; if your dealer agrees, contact the TAC on (03) 5225 6738 to find out about the next steps to take.

Advocating to make manufacturers produce and promote safer cars

There are a number of issues that can be aired when there is an opportunity through channels such as the media, letters to the editor, manufacturers and importers directly, government agencies and local politicians; they include:

- the need to reduce the scale of the speedometer dial to better reflect top speed limits across Australia (130 km/h is the maximum speed limit in the NT); the notion that we are prepared to accept a top speed of 240 km/h runs counter to achieving safe outcomes! This initiative is currently being considered as part of Australia's National Road Safety Strategy.
- In a similar vein, the actual top travel speeds of vehicles can be limited; for modern vehicles the change can usually be achieved through changes being made to the software programs that help to manage the engine and its performance;
- Encourage manufacturers to fit their vehicles with seatbelt reminder systems that provide audio warnings if one or more occupants are unrestrained; in Victoria, about 20% of vehicle occupant fatalities were not restrained at the time of the crash;

Demonstrating new safety technologies to the community via media events

Opportunities may arise where manufacturers are prepared to demonstrate the role of their new safety features to local media for broader promotion to local communities; features may include Intelligent Speed Assist (ISA), adaptive cruise control, lane departure warning, fatigue detection or pedestrian collision avoidance systems.

The TAC SafeCar, that has incorporated a top speed limit of 120 km/h with a speedometer dial to match as well as Intelligent Speed Assist (ISA), may be available for demonstration to local decision-makers, the community and the media from time to time.

The message to be promoted at the end of such demonstrations is that we want to see these technologies becoming available across the range of cars available to the community and for it to occur sooner rather than later! Follow-up letters to appropriate organisations and agencies is a worthwhile activity.

Working with local businesses and industry to introduce Safe Vehicle Purchase policies for their employees

This is an important initiative that calls upon the need for organisations to comply with Occupational Health and Safety standards, to promote good corporate citizenship and to reduce staff down-time and damage costs to work vehicles; the idea is to tailor a Safe Vehicle Purchase Policy in cooperation with a chosen business that sets the scene for safer vehicles to be purchased or leased in future for the benefit of their employees; refer to the sample case study attached.

Conclusion

Making significant changes to the safety of community members using the road network is never easy. It starts with people within the community who have commitment, and who understand the need to draw upon best practice and be guided by local crash statistics.

The Safe System approach helps us look at all facets of the road system – the road and roadsides, the vehicles and the road user to understand where we can best make changes that will help to eliminate death and serious injury on our roads.

This Guide has been developed to encourage local community groups to tackle the issue of getting access to safer cars – new or used. It has pointed to the ways in which safer vehicles can have such a tremendous impact on serious road trauma and sets out some ideas that can be followed up.

Best of luck in tackling this important road safety issue!

CASE STUDY #1

SAFE VEHICLE PURCHASE/LEASE POLICY FOR COMPANIES

Background

Fleet vehicles represent about 60% of all new vehicles on the road. Importantly, fleet vehicles turn over about every two or three years or every 40,000 km or so. This means that these same vehicles enter into the private fleet quickly and at greatly reduced price. If companies could be encouraged to purchase or lease safe vehicles, then their employees would benefit in the short term and the broader community in the longer term.

The challenge then is to successfully encourage companies and businesses in the locality (and especially those initially with large light passenger fleets) to adopt a Safe Vehicle Purchase/Lease Policy.

The Offer to Companies

Simply stated, the encouragement that can be given to companies is as follows:

- Road crashes are the most common form of work-related fatalities, injuries and absence from work in Australia
- Under the OH&S Act, the vehicle is a workplace with a moral and legal obligation on the part of the employer to create a safe working environment
- Adoption of a policy shows a commitment by management to their employees by helping to create a safer working environment when using a company car
- The benefits can be summarised as a safer workplace, less staff down-time due to car crashes, reduced insurance premiums and repair costs, a pro-active approach to addressing the requirements of the OH&S Act and a demonstration of good corporate citizenship
- The choice of vehicles need not necessarily mean any added costs – the “safer” cars in a given class are not necessarily much more expensive than those cars that perform less well.

The Policy

The wording of the policy can be adapted from those that have been adopted by government organisations. Refer for example to the TAC Policy that can be found on

<http://www.tacsafety.com.au/jsp/content/NavigationController.do?areaID=5&tierID=1&navID=A534763B&navLink=null&pageID=125>

CASE STUDY #2

SAFER SECOND-HAND VEHICLES FOR YOUNG DRIVERS

Background

A very significant problem is that young drivers, who are at much higher risk than their older, more experienced drivers, usually have access only to older, less safe cars. In fact, MUARC have estimated that:

If young drivers had access to the safest vehicle of the same vintage as the car they are driving, then deaths and serious injuries to young people in the age group 18 to 25 years would drop by an astounding 60%.

The challenge, then, is to find a list of affordable, safe cars that young people can access to help keep them safe on the roads.

This work has been completed (but will need to be updated on a regular basis) – The First Car List that provides a list of some 40 second-hand cars that vary in value from under \$2,000 to \$14,000 or more and which, based on real-world crash performance, attract four or more stars in terms of their capacity to protect occupants in the event of a crash.

The First Car List can be found as Attachment A at the end of this document.

Actions

Armed with this information, the challenge is to make sure that young people and their parents have access to this information at the time of purchasing the novice driver's first car.

Local media can be encouraged to direct parents and young people to the First Car List and flyers of the updated list can be printed and supplied to young people at Keys Please sessions or festivals or forums where young people congregate.

The outcomes of the MUARC research (summarised above) can be included in any media announcement.

Encourage local dealers who supply these cars to have the flyers handy to provide to young people when making a purchase.

Conduct a media event in which examples of the First Car List are displayed and their safety performance highlighted relative to their cost.

A further message that applies to households with a young person and two or more cars available - let the youngest (most at risk and inexperienced driver) have access to the safer car; prevention of death and injury is far more important than the prospect of the newer, safer car sustaining property damage.