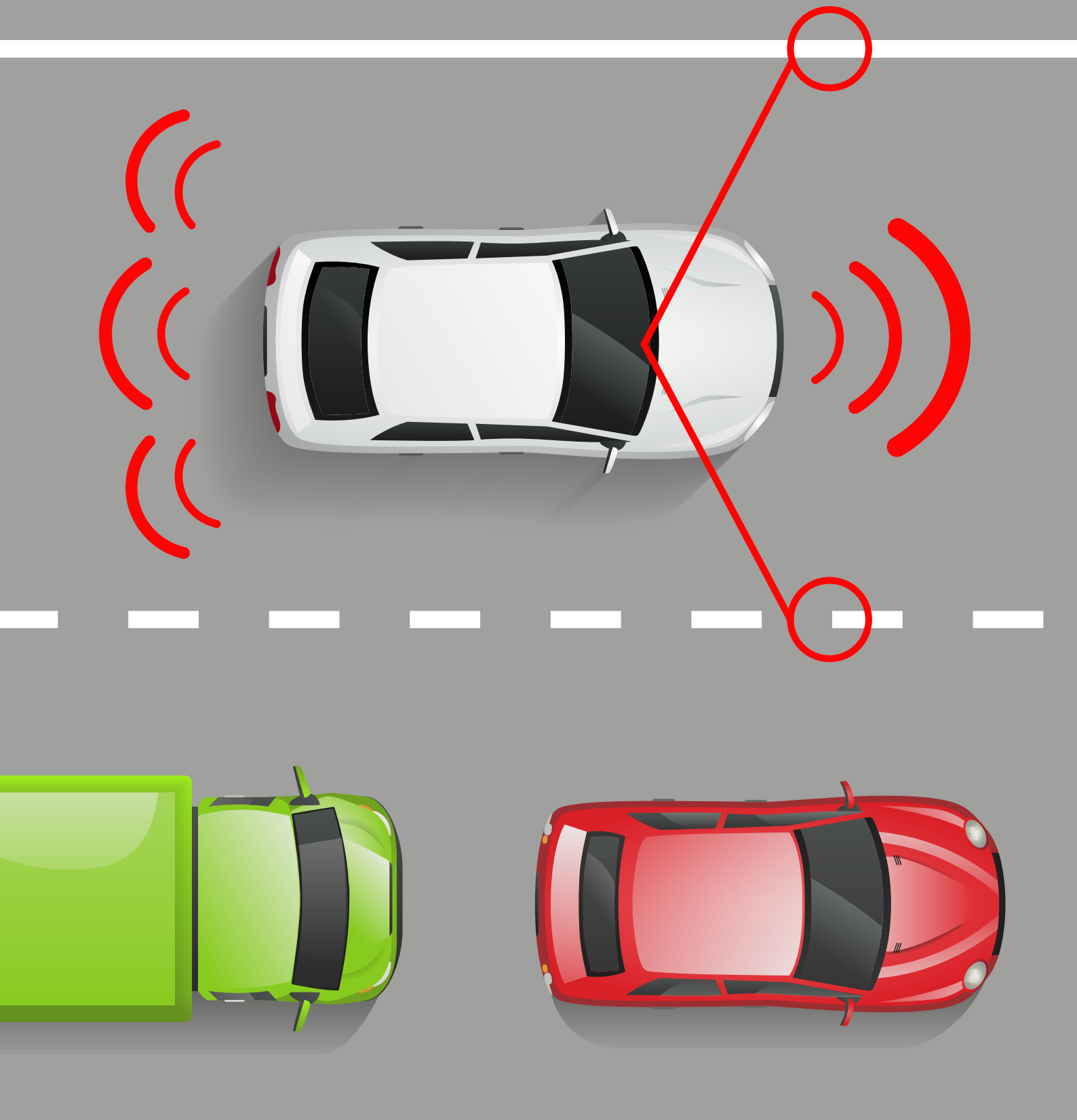
Fleet AUTO NEWS

SAFETY SPECIAL REPORT



Not all five star crash ratings are created equal

The Australian New Car Assessment Program rates the crash performance of news cars on a one to five scale. But the requirements to meet each rating level have increased and will continue to do so into the future. So a car that has achieved a five star rating this year, is likely to have more safety features and perform better in a range of crash scenarios than many previous models.

New cars are not tested every year but only when there is a significant upgrade. This means that you may buy a new car that has a five-star rating because it was tested several years ago and may not perform as well as another model that has been tested this year.

If you bought a new car in 2007, the requirements for a five-star rating were well below what they are now.

Compared to a decade ago a new car tested in 2017 would now require the extra following features:

- Electronic stability control (which is now mandatory on all news cars sold in Australia);
- Emergency brake assist;
- Head-protecting technology (side airbags) for front and second row of seats
- Seat belt reminders for all fixed seating positions;
- Top tether anchorages for child restraints

ANCAP conducts actual crash tests to measure the forces and likely injuries a driver, passenger or pedestrian may sustain during a crash. Observations are also made on the displacement of dummies, as well as the structural integrity on the vehicle's occupant compartment.

It's important that we don't just judge a vehicle on the features it has. Some years ago, a small car with a driver's side air bag received a poorer score than a vehicle without an airbag because during the crash test, the driver's head rolled off the side of the airbag causing the crash test dummy to register significant damaging forces as it twisted alarmingly.

There are three separate tests for assessing the protection of vehicle occupants: Frontal offset test; Side impact test; and the Pole test.

A rating level for a combined score is required for each of the five categories but for two stars and above, a vehicle has to reach individual score levels in frontal offset and side impact. For a five-star rating the vehicle also has to achieve a minimum score in the Pole test. A minimum Pole test score became a requirement for a four-star rating in 2017.

All levels of score now also require a minimum pedestrian rating of "marginal" for one or two stars, and "acceptable" for three stars and above, and an "acceptable" whiplash rating for one to three stars and "good" for four to five stars.

None of these ratings were required up to 2011.

ANCAP will continue to upgrade the requirements to achieve a safety rating and in 2018 Automatic Emergency Braking will become mandatory for a five-star rating.

When ANCAP first started there was some strong criticism from the industry but there is now a very wide acceptance of the value of its work.

Fleet Auto News recently spoke to several CEOs of Australian car companies. There was positive support and a public commitment to jumping the safety bar even if it gets higher.

As an OH&S policy, many companies will only buy five star rated cars so ANCAP procedures have helped improve the driving environment and hastened the adaptation of the latest technologies. One of the most critical areas of development has been for pedestrian safety. Now that this is a measured attribute, car design and technology has advanced rapidly.

The speed at which safety features are now becoming available in the lower end models is much quicker than it used to be.

ANCAP procedures and requirements have not been exactly the same as Euro NCAP but they have been moving closer together. By 2018, ANCAP and Euro NCAP policies and protocols will be largely aligned.

The Insurance Institute for Highway Safety in the United States, rates vehicles using a scaled rating system (Good, Acceptable, Marginal or Poor). The range of tests and test configurations differ across test programs as does the way in which the final rating is calculated. The specifications of car models that are sold in different countries may differ so overseas results, especially from the US should be taken as a guide only.

ANCAP Safety Rating Requirements

Rating Year	Minimum Frontal Offset Score (out of 16)	Minimum Side Impact Score (out of 16)	Minimum Pole Score (out of 2)	Minimum Combined Score[4] (out of 37)	Minimum Pedestrian Rating	Minimum Whiplash Rating	Mandatory SAT[1]	Minimum Additional SAT[2]
Requirements for 5 star ANCAP safety rating								
2011	12.5	12.5	1	32.5	-	-	ESC, 3PSB, HPT front seats	-
2012	12.5	12.5	1	32.5	Marginal[3]	Acceptable	ESC, 3PSB, HPT front seats	2
2013	12.5	12.5	1	32.5	Marginal[3]	Acceptable	2012 + SBR front seats, EBA	3
2014	12.5	12.5	1	32.5	Acceptable[3]	Acceptable~	2013 + HPT 2nd row seats	4
2015	12.5	12.5	1	32.5	Acceptable[3]	Good	ESC, 3PSB, HPT front & 2nd row seats, SBR front & 2nd row fixed seats, EBA	5
2016	12.5	12.5	1	32.5	Acceptable[3]	Good	Same as 2015	6
2017	12.5	12.5	1	32.5	Acceptable[5]	Good	2016 + TT[6]	6
Requirements for 4 star ANCAP safety rating								
2011	8.5	8.5	-	24.5	-	-	-	-
2012	8.5	8.5	-	24.5	-	-	ESC	-
2013	8.5	8.5	-	24.5	-	-	ESC	1
2014	8.5	8.5	-	24.5	Marginal[3]	Acceptable	2013 + 3PSB, HPT front seats	2
2015	8.5	8.5	-	24.5	Acceptable[3]	Acceptable	ESC, 3PSB, HPT front seats, SBR front seats, EBA	3
2016	8.5	8.5	-	24.5	Acceptable[3]	Good	2015 + HPT 2nd row seats	4
2017	8.5	8.5	1	24.5	Acceptable[5]	Good	2016 + SBR 2nd row fixed seats, TT[6]	5
Requirements for 3 star ANCAP safety rating								
2011	4.5	4.5	-	16.5	-	-	-	-
2012	4.5	4.5	-	16.5	-	-	-	-
2013	4.5	4.5	-	16.5	-	-	ESC	-
2014	4.5	4.5	-	16.5	-	-	2013 + 3PSB	1
2015	4.5	4.5	-	16.5	-	-	2014	2
2016	4.5	4.5	-	16.5	Marginal[3]	Acceptable	2015 + HPT front seats	3
2017	4.5	4.5	-	16.5	Acceptable[5]	Acceptable	2016 + SBR front seats, EBA, TT[6]	4
Requirements for 2 star ANCAP safety rating								
2011	1.5	1.5	-	8.5	-	-	-	-
2012	1.5	1.5	-	8.5	-	-	-	-
2013	1.5	1.5	-	8.5	-	-	-	-
2014	1.5	1.5	-	8.5	-	-	ESC	-
2015	1.5	1.5	-	8.5	-	-	2014	1
2016	1.5	1.5	-	8.5	-	-	2015 + 3PSB	2
2017	1.5	1.5	-	8.5	Marginal	Acceptable	2016 + SBR front seats, HPT front seats, TT[6]	3
Requirements for 1 star ANCAP safety rating								
2011	-	-	-	0.5	-	-	-	-
2012	-	-	-	0.5	-	-	-	-
2013	-	-	-	0.5	-	-	-	-
2014	-	-	-	0.5	-	-	-	-
2015	-	-	-	0.5	-	-	-	-
2016	-	-	-	0.5	-	-	ESC	-
2017	-	-	-	0.5	Marginal	Acceptable	2016 + 3PSB, SBR front seats, TT[6]	2

***SBR** = Seat belt reminders for front seats and 2nd row of fixed seats*
***ESC** = Electronic stability control;*
***HPT** = Head-protecting technology (side airbags) for the front seats*
Head-protecting technology (side airbags) for second row of seats

***3PSB** = Three-point seat belts for all forward-facing seats;*
***SBR** = Seat belt reminders for all fixed seating positions;*
***EBA** = Emergency brake assist;*
***TT** = Top tether anchorages for child restraints*

SWAPPING CARS

It's like learning a new language.

Recent research from the UK, highlights the difficulties of adapting with the changeover from current motor vehicles to autonomous cars. But it also highlights problems of adjusting to a different car including the way in which the technology operates and how you control it.

The changeover period to autonomous vehicles is not just about how a manually driven car will interact with an autonomous one.

What happens when drivers switch from one vehicle to another or if an autonomous car has to pass controls back to the driver because it has reached a situation that it cannot comprehend?

The UK's Venturer autonomous vehicle project has conducted trials at Bristol Robotics Laboratory and on roads at the University of the West of England (UWE) campus.

The trials set out to investigate two scenarios when switching frequently between automated and manual driving modes within urban and extra-urban settings. The scenarios are: 'Takeover' (the time taken to re-engage with vehicle controls); and 'Handover' (the time taken to regain a baseline/normal level of driving behaviour and performance).

A key finding was that it took 2-3 seconds for participants to takeover manual controls and resume active driving after short periods of autonomous driving in urban environments. Participants also drove more slowly than the recommended speed limit for up to 55 seconds following a handover request.

The broader issue here for companies with fleets is when drivers who are used to driving in one car (which might be their own) have to jump into a different vehicle at work.

Fleet Auto News tests new cars each week. In the past, the main thing you had to do when you picked up a new car was to adjust the seat and mirrors and check what side of the steering wheel the indicators are on.

You started driving after only a few moments in the car. Now it takes much longer.

There are two major differences. For a start, the controls are not just a series of knobs and buttons but are often activated by a series of commands on a screen which are different for each car.

Pre-setting radio stations, for example, is not just finding the frequency and holding down a switch for a few seconds. Now it is often a complex series of steps requiring interpretation of screen symbols.

One of the key aspects of a road test now is, how long does it take to connect Bluetooth?

Apple Car Play and Android Auto allow you to have your familiar phone controls up on the car screen. That's good but I want it for every control not just music and podcasts.

The other issue is that not all road safety features are the same. Some automatic emergency braking only works at relatively low speeds. Many cars are now getting lane departure warnings but the level of accuracy varies enormously.

The JD Power organisation conducts reliability surveys for news cars in America. They base their results on how many times a car is taken back to the dealer. The numbers have increased recently not because of cars breaking down more but because people are going back to the dealer more frequently to learn how to operate some of the aspects of their cars.

Road safety for fleets might well have to incorporate a training period for people who have not driven a particular model before and a features list of what the car has and how the critical functions are controlled and ultimately operate.

FLEET SAFETY POLICIES

There is no need to be alarmed about the responsibilities of providing safe driving conditions for your employees but you are required to be thorough.

All governments see this as a key area for reducing fatalities and injuries on the road as about 30% of all vehicles registered in Australia are used for business purposes, and over 50% of all new vehicles are purchased initially for commercial use. It is estimated that fleet vehicles travel, on average, around three times the distance of non-fleet vehicles.

Road Safety is a subset of the overall thrust of the safety regulations. It is critically important that you do not let short term, bottom line operational costs detract you from safety issues that may have long term effects on costs and litigation. The responsibility is therefore not just in a fleet operation role. Businesses' responsibilities begin with planning before commencing the driving task, through to on-road risk management, and monitoring and review of fleet performance.

A road safety program involves human resource management, asset management, public liability and management of contractors to the business.

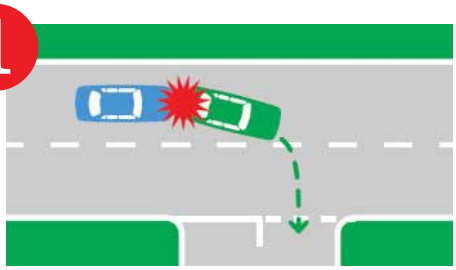
It is reasonable to put the responsibility for road safety in your OH&S (safety) department or with a manager that has overall responsibility for ensuring a complete process is in place working with line mangers, safety managers and fleet managers.

The cold hard truth is that you may face penalties if you don't meet the requirements.

While guidelines are striving to ensure you are thorough, they are not trying to be draconian or prohibitively expensive. Expressions such as "reasonably practical to protect people" are used and it is recognised that costs are an important component of any business.

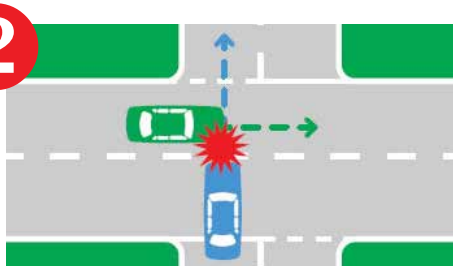
THE FIVE MOST COMMON CRASHES

1



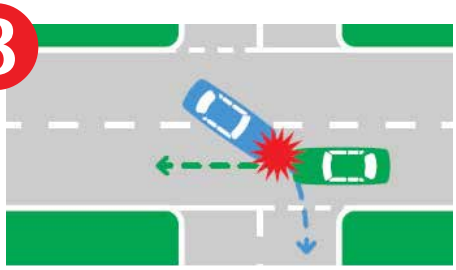
Colliding with the rear of another vehicle.

2



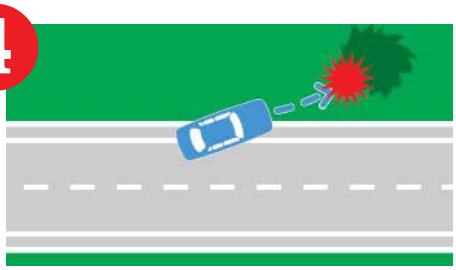
Colliding with another vehicle from an adjacent direction (from the side).

3



Colliding with another vehicle from the opposite direction.

4



Running off the road on a straight section and hitting an object or parked vehicle.

5

Running off the road on a curve or bend and hitting an object or parked vehicle.

Source: http://www.rms.nsw.gov.au

The alternative would be for everyone to drive a top of the range Mercedes and only travel at five kilometres per hour. We don't see the requirements as pushing to extremes but there is certainly an expectation, indeed a requirement, to work systematically within the broad context of desired OH&S outcomes which involves all the factors that make up a safe driving environment.

Safe Working Australia is the Australian government statutory body established to develop national policy relating to Work Health and Safety (WHS) and workers' compensation.

It does not regulate or enforce WHS legislation. Business owners must meet the WHS requirements set out in the acts and regulations in your state or territory which it lists. The information for each of the states and territories is typically set out with links to the legal regulations, the appropriate authority, helpful information and support services you can access.

Employers are responsible not only for ensuring the safety of employees who drive for them, but also for the general public, including other drivers and pedestrians.

Work Safe Victoria says that the requirements would be supported in an employer's OH&S program by:

- purchasing and maintaining a safe and roadworthy fleet
- ensuring employees have the relevant appropriate driver licences
- scheduling work to account for speed limits and managing fatigue

- providing appropriate information and training on work related driving safety. How we cope with evolving technology in vehicles is one such issue
- monitoring and supervision of the work-related driving safety program

An employer's duties can also extend to an independent contractor engaged by the employer and any employees of the contractor. This duty may be limited by the extent of control the employer has over the contractor's activities.

While employers have a duty of care, so do employees. The duty is narrower, but requires that employees take reasonable care and not put themselves or others at risk by their actions or omissions.

The employee duties would include:

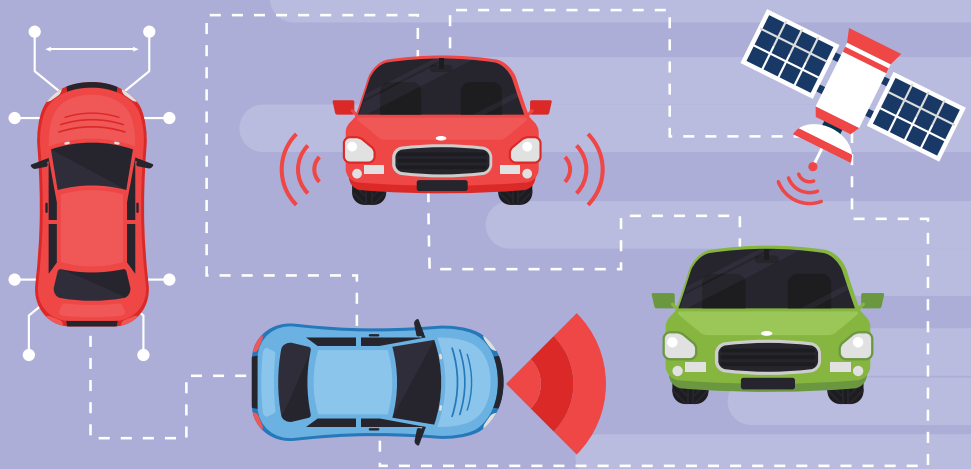
- holding a current, valid driver's licence
- abiding by all road rules (eg speed limits)
- refraining from driving if impaired by tiredness or medication
- reporting any incidents required by the employer's program
- carrying out any routine vehicle checks required by the employer

Quality management suggest you review processes regularly especially if you identify problems. Fleet Auto News has highlighted the fact that a regular interaction with your drivers, in a non-combative environment, has proved to be very effective.

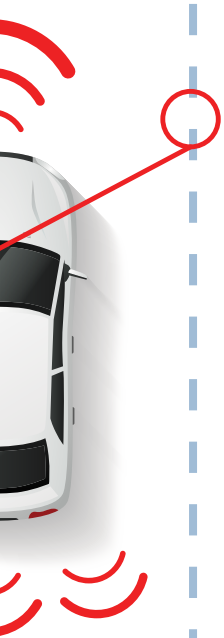
A fleet manager can give monthly information not only on operating costs but stand out features, a line manager can discuss road safety issues at least monthly with regular drivers and the safety managers can do at least a yearly audit on how the processes are running including reporting of issues.

The commitment of government can be seen in the support services that are offered. SafeWork NSW for example offers a wide range of free advice and even some financial support including webinars, small business rebate for safety equipment, Paralympian speakers, safety advisory visits, presentation or workshop on a range of safety, worker's compensation, insurance, injury management, and legislative topics.

Passive safety features compared to active features?



Should we spend more money on protecting drivers when they have a crash (passive safety) or, on efforts to stop the accident happening in the first place (active safety)?



The answer seems obvious: prevention is better than the cure. But the fact remains that crashes have been an inevitable part of our motoring experience and there are great social benefits in producing vehicles that protect you when accidents happen.

Seat belts and air bags are the two clear examples of passive measures that have saved many lives and injuries. According to the Centre for Accident Research & Road Safety – Queensland, wearing a properly adjusted seat belt reduces the risk of fatal or serious injury by up to 50%.

Other passive measures that have developed over time, that may not be as well-known as seat belts include: the body structure of the car that crumples in a crash and is much better at maintaining the integrity of the cabin; removing sharp edges from car interiors; and collapsible steering wheels.

Seat belt and airbag technology has not stood still. Examples of improvements include seat belts that tighten in a crash and the way in which airbags inflate that give fuller protection.

But active safety is still the holy grail. The research clearly shows safer roads have proved to be a consistent way to reduce deaths and injuries when a crash occurs. If you wander toward the opposing traffic lane it is better to hit a separation barrier than to go head first into a vehicle coming the other way. If you go off the road to the left and hit a safety embankment rather than hitting a solid object such as a tree. Frangible power poles break away when you hit them rather than stopping you dead.

Well-designed roads also have a huge role to play in active safety. If the road has fewer dangerous curves, better visibility in bad conditions, rough surfaces, you are less likely to crash. Multi-lane roads reduce the frustration of being stuck behind a slow vehicle and makes overtaking a matter of lane changing rather than going into the opposing traffic lane.

When the F6 freeway was built to Wollongong south of Sydney, replacing an old mainly two lane rural highway, the crash rate on the motorway was 90% lower than the old highway.

But modern technology has now massively increased active safety features in vehicles.

Over the years we have seen gradual improvements in brakes, tyres and suspensions. But then we began to see more specific technologies. ABS brakes helped you stop, traction control reduced the chance of losing control and Electronic Stability Control (ESC) has been more successful than we might have expected.

Research conducted in the US has shown that ESC can reduce the risk of single-vehicle crashes by about 40% and up to 67% for 4WD and sports utility vehicles. Similar results have also been seen in Australia.

But the big move now is to not only help you identify the problem but have the car automatically take safety actions on your behalf. Automatic Emergency Braking (AEB) cannot guarantee that you will avoid a collision but even if you still crash, the severity is likely to be diminished.

So while passive safety has been the back bone of vehicle safety design, digital technology is now opening up a whole new world of active safety measures that will help reduce crashes as well as help mitigate against the likelihood of death or injury if a crash does occur.

The Cost of Safety

How much does road safety cost a business? Perhaps a better question is "How much does a business benefit from ensuring road safety is a priority in their fleet?".

Typically, fleet vehicles travel greater distances in a year and therefore, not surprisingly, are more likely to have a crash.

The Bureau of Infrastructure, Transport and Regional Economics as quoted in Risbey et al, estimates the cost of crashes in 2006 to be:

- $2.67 million per fatal crash.
- $266,000 per crashes resulting in at least one hospitalised injury
- $14,700 per crash resulting in at least one non-hospitalised injury
- $9,950 per property damage only crash (which includes towing, repair and unavailability of the vehicle)

The high cost of crashes is often associated with pain and suffering and the loss of productively from fatalities or injuries. But the figure of nearly $10,000 for a property damage only crash clearly shows that the most direct costs are still significant.

But of course, business should not just consider the property costs.

The same BITRE study suggest that vehicle repair costs and insurance administration (both of which are ultimately reflected in your premium) account for only 32% of costs.

Data from the Australian Safety and Compensation Council (ASCC) indicates that vehicle accidents represent 41% of all compensated work fatalities.

Apart from direct costs, the disruption to the business should not be under estimated.

There is also the loss of respect that a business may suffer if staff or the public think that you have skimped on safety and that has resulted in pain and suffering. In the 1970s the Ford Motor Company was accused of putting a cost/benefit analysis ahead of a concern for the public with the design of the fuel system in their Pinto small car. It is a complex issue but the case remains a component of many business ethics and legal case studies.

What does safety cost?

We are now seeing many safety features making their way down to the cheaper vehicles. But many car manufacturers still have some safety features as an additional package or only available on the upper models.

The just released Subaru XV has an excellent road safety system called Eyesight which includes automatic emergency braking. But it is not available on the base model. The next variation above the base model does have this safety system but the list price is an additional $2,350. The top of the range XV with a list price that is $7,250 higher than the base model comes with blind spot monitoring, high beam assist, lane change assist, rear cross traffic alert and reverse automatic braking. Of course, it has other extra comfort features as well.

Given the high cost of crashes the additional purchase price looks like a good investment.

With half of all new cars being sold to business, Fleet Managers should demand manufacturers include safety features on the models they purchase.

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- ☑ **Forward Collision Mitigation (FCM)**
- ☑ **Active Stability Control (ASC)**
- ☑ **Reinforced Impact Safety Evolution (RISE) body**
- ☑ **Emergency Brake Assist System (EBA)**
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ANCAP Safety ★★★★★ TESTED 2014

^Drive away price includes 12 months registration, CTP insurance, stamp duty and dealer delivery. Applicable to Outlander LS Safety Pack 2WD petrol and Outlander LS Safety Pack 4WD petrol and diesel variants.