

PARTNERSHIP PROGRAM

Policy paper: **Guide to the Development of a Safe Vehicle Purchasing Policy**

The Goal of this Guide

This document has been developed by the NRSPP to guide companies and fleet managers through the process of developing a safe vehicle purchasing policy. Fleet operators are strongly encouraged to develop such a policy to guide the procurement of vehicles for the organisation. Vehicles covered by the policy can include those purchased, leased, rented or under the operational control of the organisation.

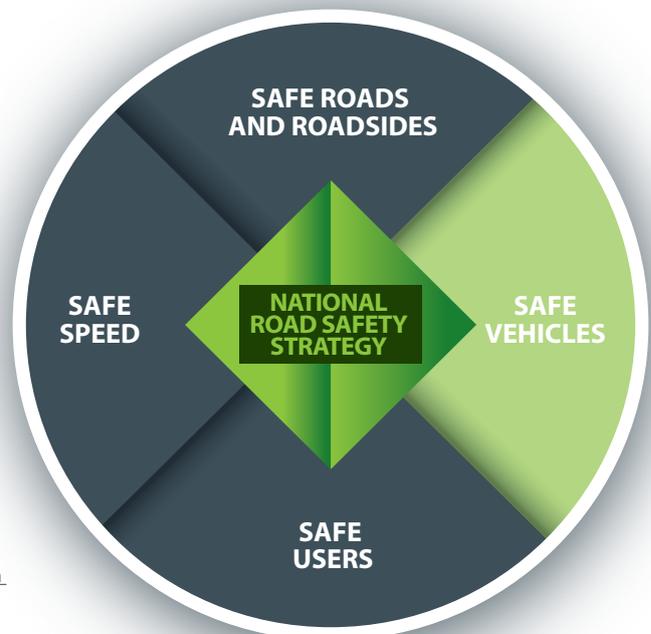
Implementation of such a policy allows for improvements in road safety outcomes in an area that may have not previously been considered. Organisations are strongly encouraged to take an active interest in improving their safety on the road. It's simply good business to do so – common outcomes include*:

- cost savings through the reduction of vehicle crashes, workplace injuries and incidents
- market development and branding of an organisational safety reputation
- the demonstration of an organisations commitment to high levels of OH&S
- confidence in organisational compliance with Workplace Health and Safety legislation.

*PRAISE 2014, 'The business case for managing road risk at work', European Transport Safety Council

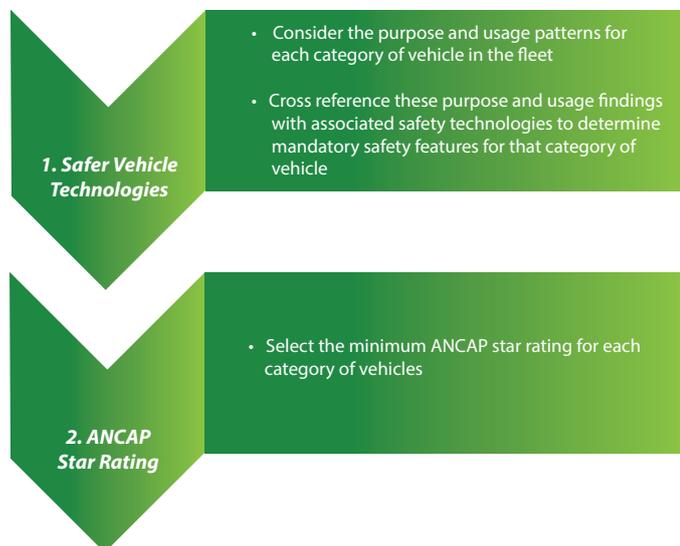
The safe system is the foundation for the NRSPP framework - safe speeds, safe vehicles, safe drivers and safer roads. This safe vehicle purchasing policy only relates to one section of the framework, as such it is only one of a number of policies that make up a systems approach to vehicle safety within an organisation. The implementation of this policy must be considered alongside that of other safety systems including safe driving policies, incident reporting frameworks, journey management practices and an organisation wide safety culture.

National Road Safety Partnership Framework



How to use this Document

This document consists of two components, a description of a two-step process that can be used to develop the policy specific to the needs of the organisation (outlined in the figure below), and a draft policy template, developed through consultation with fleet operators.



Fleet operators are strongly encouraged to modify the attached template as required to suit their specific needs. Such an approach will allow for the creation of a tailored fleet policy that both optimises safety and is practical to implement for their organisation.

As mentioned, the development of the safe vehicle purchasing policy can be broken down into two steps. The first step involves understanding the way in which the vehicle will be used, and matching this with particular vehicle safety features or technologies that could be expected to provide particular safety benefit and should therefore be considered mandatory.

1. Selecting Safer Vehicle Technologies

The vehicle purpose, operating environments, trip types and usage patterns of vehicles often vary within a fleet. A clear understanding of these usage characteristics should allow the policy maker to identify specific features or technologies that can be expected to provide significantly improved safety outcomes. Traditionally, understanding the

function, capability and limitations of this wide array of safety features has been a difficult task for policy makers. This task is sometimes made more difficult by the different terminologies used by vehicle manufacturers to describe what might be identical safety features. APPENDIX A aims to help by providing a brief explanation the most common safety technologies including some examples of manufacturers marketing names.

The connection between usage characteristics and the specification of safety technologies is illustrated with the following examples:

- ABC Drainage runs a small fleet of trade utes that frequently tow heavy trailers at highway speeds between country towns. Trailer stability control would be considered mandatory for new vehicles in this category.
- PQR Mining has a category of passenger vehicles being used for shift supervisors to commute to and from the mines well outside of normal “waking hours”. Trips can be up to an hour duration, and are often on rural roads with unformed edges and gravel run-offs. Fatigue is therefore identified as a significant risk. Fatigue detection systems could be considered mandatory in this situation.
- XYZ Childcare operates several people mover vehicles that from time to time need to carry infants and pre-school age children to various medical appointments and excursions. In this case, at least three ISOfix child restraint locations, and rear seatbelt reminders for all 2nd and 3rd row seating positions could be considered mandatory.

Consideration of Vehicle Usage

For each category of vehicle within the fleet the following factors should be considered to define a vehicle’s usage characteristics*:

- trip type and duration (length of trip, number of stops, number of drivers etc.)

*This list is merely indicative of the areas that an operator should investigate when determining vehicle usage. It is in no way exhaustive, operators should carefully undertake a complete analysis of likely vehicle usage.

- environment and road surfaces (urban, regional, mine, outback)
- loads carried (equipment, animals, hazardous goods etc.)
- occupants (adults, children, child restraints etc.)
- weather conditions and time of day
- surrounding infrastructure.

Safety Technologies

Specific vehicle usage characteristics can be matched with the associated vehicle safety technology to determine a list of mandatory safety features. The inclusion of these mandatory features could be expected to deliver real added safety benefits to the organisation.

A summary of the additional technologies that could be considered for selection can be found in APPENDIX A. Use of this list must take into account that:

- It is neither mandatory nor exhaustive.
- Many of the technologies are recent innovations and may not be available on all vehicle types.
- Safety technologies are evolving rapidly and operators must regularly review current market offerings.

Before the purchase of any vehicle, fleet operators must have a clear understanding of a vehicle's purpose in order to ensure that it will be fit for purpose. Regardless of a vehicle's safety features or ANCAP (Australasian New Car Assessment Program) rating, if it is not suitable for its operating environment it is not a safe vehicle.

2. ANCAP as part of your policy

The Australasian New Car Assessment Program (ANCAP) provides an independent assessment of a vehicle's safety with scores awarded between 1 and 5 stars. These star ratings are based on an evaluation of the likelihood of serious injury for drivers, front seat passengers, and pedestrians involved in the most common types of crashes as well as a vehicle's collision avoidance capabilities.

In addition to providing a simple star rating, the ANCAP website provides a list of safety features including both passive and active safety technologies. To review both the detailed test results and the list of safety features available as an option, standard fitment, or not available at all, simply click on the "Full Technical Report" under "More Information" on the rating page of the vehicle in question.

Note that it is a fundamental strategy of all NCAP organisations around the world, including ANCAP, to continuously drive improvements in vehicle safety over time by increasing the requirements or performance thresholds for each star rating every year or every two years. To review the program of increasing performance requirement for each star rating up until the end of 2017, see pages 7-10 of the "ANCAP Rating Road Map 2011-2017" available at www.ancap.com.au/technical-protocols-and-policies.

ANCAP star ratings give the most clear indication of a vehicle's safety performance and NRSP recommends that these ratings are given strong consideration in any fleet operator's vehicle selection policy. Further explanation of the ANCAP system and a summary of the ANCAP ratings process has been included in APPENDIX B in order to give operators additional guidance as to how these ratings are determined and where these ratings fit into their overall vehicle selection policy.

At the time of writing, a review of organisational fleet policies found that:

- The majority of vehicle purchasing policies mandate a 5-star minimum rating for all passenger vehicles. A 4-star minimum for passenger vehicles is not common.
- Vehicle purchasing policies for light commercial vehicles were more evenly divided between those that mandated a minimum of 4 stars and those that mandated 5-stars only.
- No policies were found to include both a minimum star rating and a date stamp requirement. (The date stamp e.g. "Tested 2014", simply indicates the "protocol year" requirements against which a vehicle has been assessed).

NRSPP strongly recommends a 5-star policy for all vehicles but recognises that this may not always be possible as a 5-star fit for purpose vehicle may not always be available or might be beyond an organisation's financial capacity. In these cases a policy of 4-star or better, or the selection of vehicles that are best in segment are options that could be considered. Where this is the case, the potential for reduced safety outcomes should be recognised by the operator.

It is theoretically possible to add a date-stamp requirement to any star rating requirement. For example, a policy could mandate a 5-star only rating and require the rating be date-stamped 2015 or later. This should however, only be considered if the policy maker has a very clear understanding of the protocol changes year on year, and can point to a clear benefit from including a date stamp requirement.

Due to continued improvements in vehicle design and safety technology as well as the continued evolution of ANCAP safety criteria, any organisations

Safer Vehicle Purchasing Policy should be seen as a 'live' document which at all times strives to provide optimal safety outcomes and should reviewed on an annual basis.

ANCAP Ratings and Vehicle Variants

ANCAP ratings do not always apply to all available variants of a model. Examples of differences in vehicle ratings for vehicle variants currently seen in the market include:

- 5-star ratings for dual cab utility vehicles, while single cab variant receives 4-stars
- 5-star ratings for vehicles fitted with optional curtain airbags, a variant without optional curtain airbags receives 4-stars
- 5-star rating for front wheel drive variants only. All-wheel drive variants are un-rated.

In each of the above examples, the lesser rated variant would not meet the requirements of a fleet with a 5-star minimum (for example) and should therefore not be considered for inclusion in the fleet. In summary, fleet operators should ensure that all variants under consideration meet the organisation's minimum star requirement.

It should also be noted that as ANCAP ratings do not take into account after-market vehicle additions. Modifications to the vehicle need to be carefully carried out in order to not impede the functioning of the vehicles handling characteristics, safety features and crashworthiness structures e.g. crumple zones. Aftermarket equipment suppliers should be able to provide information on the ANCAP status of their equipment.

ANCAP into the Future

In addition to the annual increases in performance requirements for star ratings, ANCAP will complete its transition to full alignment with the European NCAP rating system (EuroNCAP) by 2018. The star ratings and logos will continue to use the ANCAP branding. The test and assessment protocols will switch to those of the EuroNCAP organisation and can be found at www.euroncap.com/en/for-engineers/protocols.

At this point minimum requirements for safety ratings will further increase, particularly in relation to the provision of active safety technologies and levels of pedestrian protection required. As a result of this step change in the protocols, this transition is expected to result in a significant drop in the proportion of new vehicles being issued with a 5 star rating. While the highest level of safety is always advisable, because of this transition it may be appropriate for operators to reconsider their minimum star rating requirements for ratings date-stamped 2018 or beyond. ANCAP has not yet provided any guidance on the correlation between the overall levels of safety designated by the star ratings under the “old” and “new” protocols. When this information is available it should be used to guide any revision in star rating for those vehicles with ratings date stamped 2018 onwards.

Note that changes in protocols are not applied retrospectively so this change will only apply to ratings date stamped 2018 and beyond. If an operator revisits their star rating policy to

consider this step change in requirements the adjusted requirement should very clearly only apply to those ratings date-stamped 2018 and beyond.

A hypothetical example of a purchasing policy that mirrors this change in protocols is shown below:

- For ratings date stamped 2017 or earlier, or with no date stamp – 5-star only.
- For ratings date stamped 2018 or later – 4-star minimum.

Note in the above example, the date stamp is being used to distinguish between the protocols used to generate the rating (and to reflect the increase in stringency at 2018), not to create an additional performance requirement.

Company Name

Template Only

Date Last Reviewed:

6/8/15

Scope

This light vehicle selection policy applies to all company vehicles, owned, hired, leased, novated leased or any vehicle that is privately owned and used for company related purposes where driving hours and or kilometres travelled are claimed by the employee or any other personnel in all locations.

Abbreviations / Definitions

- Light Vehicle (C – Class Drivers Licence): A motor vehicle with a gross vehicle mass (GVM) not greater than 4.5 tonne and constructed or equipped to seat no more than 12 adults (including the driver). This policy excludes light trucks and small buses that are no greater than 4.5 tonne.
- ANCAP: Australasian New Car Assessment Program (www.ancap.com.au)
- GVM: Gross Vehicle Mass

Applicability

This policy should be read and applied in alignment with the organisations overall Work Health and Safety policies, procedures and any other Vehicle or Mobile Equipment policies and procedures as specified following.

Associated company documents include: To be completed by the organisation if required

X

X

Vehicle Selection and Safety Criteria

All light vehicles inclusive of all light fleet vehicles and light commercial vehicles less than 4.5 tonnes GVM must meet the minimum criteria defined below (exclusive of light trucks and small buses)

Minimum Specifications:

- 5-star ANCAP safety rating

In addition to the above the following safety features are mandatory for all vehicles:

- Electronic Stability Control System (ESC)
- Anti-lock Braking System (ABS)
- Emergency Brake Assist (EBA)
- Head Restraints for all seats
- Airbags – Front, Side and Curtain airbags protecting all passengers
- Safe / Visible Colours i.e.: white or bright tones such as red, yellow
- If children under the age of 7 years are to be transported in the vehicle (including where private use of the vehicle may be permitted), the vehicle must have child restraint anchorages.
- Deemed suitable according to checklist of ergonomics and adjustability (see APPENDIX C).

In addition to the above minimum star rating, and mandatory features, the following safety features are mandatory and have been selected based on expected usage patterns:

Category A Vehicles – [Vehicles expected to travel at least 150km a day]

- Fatigue reminder

Category B Vehicles – [4WDs and Utes]

- Trailer stability control
- ESC with rollover mitigation

After market modifications or addition

To ensure safety is not compromised it is required that any after-market modification or addition do not interfere with the underlying ANCAP rating of the vehicle. Modifications to the vehicle must not impede the functioning of the vehicles handling characteristics, safety features and crashworthiness structures e.g. crumple zones. Aftermarket equipment suppliers must demonstrate that their modifications do not lead to a violation of the minimum star rating for that vehicle.

Authorisation

Signed: _____

Name: _____

Position: _____

Date: _____

Document Control Details

Document Owner:		Prepared By:		
Approved By:		Signature:		Date:
Document Title	Date Effective	Revision Date	Set Review Date:	No of Pages:

Light Vehicle Selection Policy #

Appendix A: Additional Safety Technologies

Adaptive Cruise Control: Automatically adjusts the vehicle speed to maintain a safe following distance to the vehicle in front. Typically ACC uses a single forward looking radar or radar plus camera.

Other names: Autonomous cruise control. Active cruise control. Radar cruise control.

Adaptive Forward Lighting Systems: have the ability vary headlight intensity, direction and range to suit to the local environment and to optimise driver vision. Factors that the system can respond to include vehicle speed, steering wheel angle, weather conditions (including rain hitting the windscreen), street lighting, approaching headlamps or tail lamps ahead etc.

Other names: Intelligent adaptive lighting.

Alcohol/Drug Ignition Interlock: an electronic testing device integrated into the ignition system of the vehicle which requires the driver to blow an alcohol free breath sample (for example) before the vehicle will operate.

Other names: Ignition interlock.

Automatic Emergency Call: Automatic alert to emergency services in the event of a severe collision, generally where airbag deployment has occurred. May of particular benefit for vehicles frequently travelling in isolated areas.

Other names: e-call. Advanced automatic collision notification. Automatic crash notification.

Automatic Highbeam: uses forward looking sensors such as cameras and radar to detect the speed and distance to vehicles ahead and automatically applies the brakes if the driver does not react. AEB systems will mitigate the severity of an impact, or in some cases completely avoid the impact.

Other names: Emergency Braking, Collision Mitigation Braking, Active City Stop, Smart City Braking System, Pre Crash Braking, Collision Avoidance.

Autonomous Emergency Braking: uses forward looking sensors such as cameras and radar to detect the speed and distance to vehicles ahead and automatically applies the brakes if the driver does not react. AEB systems will mitigate the severity of an impact, or in some cases completely avoid the impact.

Other names: Emergency Braking, Collision Mitigation Braking, Active City Stop, Smart City Braking System, Pre Crash Braking, Collision Avoidance.

Blind Spot Monitoring: Provides a warning to driver when there is a vehicle in their 'blind spot'.

Other names: Side Blind Zone Alert, Blind Spot Detection.

Daytime Running Lights: typically low powered lights that stay on during the day to improve the visibility of the vehicle to other road users.

Electronic Brakeforce Distribution: Working with ABS to optimise distribution of braking forces

Electronic Stability Control: can detect when a vehicle has or is about to lose control and applies braking to individual wheels to improve vehicle stability.

Other names: Electronic Stability Protection, Dynamic Stability Control.

Emergency Brake Assist: the system deduces that braking is the result of an emergency event and automatically assists driver to achieve maximum possible braking.

Emergency Stop Signal: Signal at the rear of a vehicle to alert other drivers that a high braking force has been applied.

Fatigue Detection: a system which determines a driver's level of attention by monitoring the driver's face and eyes or their input to the vehicle, typically the pattern of steering wheel inputs. If the system detects a reduced level of driver attention a warning can be delivered audibly, visually or through haptic means such as seat or steering wheel vibration.

Other names: Drowsiness detection system. Attention assistant. Driver Alert Control.

Fatigue Reminder: A trip timer that monitors hours or distance travelled and encourages rest breaks based on preset parameters.

Other names: Rest reminder

Following Distance Warning: Alerts driver if the headway between vehicle and the one in front is below a safe level at current vehicle speed.

Other names: Following Distance Indicator.

Head Restraints for all seats: Whiplash mitigation for all occupants.

Hill Launch Assist: Prevents vehicle from rolling backwards as driver moves from the brake to the accelerator pedal.

Inflatable Rear Seatbelts: Inflate to increase the area that restrains a passenger in the event of a crash, offering enhanced safety relative to a traditional web seatbelt.

Intersection Collision warning: Alerts the driver if vehicles are detected approaching from the side of an intersection with the potential to cause a collision. More advanced systems may incorporate and automatic braking function also.

Other names: Intersection Collision Mitigation, Junction Assistance.

Lane Departure Warning: Alerts driver if lane is crossed unintentionally.

Other names: Lane Assist, Driver Assist.

Lane Keep Assist: As per lane departure warning, with corrective steering input provided by the vehicle.

Other names: Lane Keeping Support.

Pre-crash systems: Vehicle is able to detect an imminent collision and prepare accordingly e.g. tighten seatbelts, optimise seat positions for airbag deployment, raise windows to prevent ejection etc.

Reversing Collision Avoidance: Visual aids such as sensors or cameras to detect objects while reversing in order to avoid collisions.

Rollover mitigation: Function with a vehicle's ESC that allows it to detect an imminent rollover and stabilise the vehicle to prevent rollover from occurring.

Other names: Roll stability system.

Rollover occupant protection: Roll over occupant protection: this system requires the vehicle to sense rollover situations and deploy of protection systems such as seat belt pretensioners and inflatable curtain airbags (also known as roof rail airbags) which inflate for longer periods of time to protect occupants during the rollover.

Roll over warning: Alert for the driver when risk of rollover is detected

Seatbelt interlock: requires the driver or driver and occupants to have their seatbelts engaged in order for the vehicle to be driven.

Seatbelt reminder: Visual and audible reminders that seatbelts are not fastened for front and rear seats

Side airbag with head protection: inflate in a side-on crash to protect people on the crashed side. Side torso (chest protecting) airbags protect the torso area only and are usually stored in the seat by the door. Side torso and head airbags also provide head protection.

Speed Alarm (Manual): the driver is able to pre-set a speed above which the vehicle will provide an alert.

Intelligent Speed assist systems: Systems that determine speed limit through a forward looking camera and/or map based data and, if the legal speed is exceeded either warn driver or actively reduce vehicle speed.

Three-point seatbelts in all seats: no seating positions may have lap only seat belts.

Top speed limiter: the driver is able to pre-set a speed which the vehicle will not be able to exceed. Typically carried out through engine output restriction.

Trailer stability control: Recognises dangerous trailer swinging motion and activates braking to restore full driver control to the trailer.

Appendix B: ANCAP Ratings Process

Ratings Process

Vehicle ratings are determined through the results of crash testing and minimum requirements for safety features and technologies. To achieve a specific safety level the vehicle must pass all minimum requirements across all categories.

Five crash tests are performed for each vehicle:

- Frontal offset test – simulation of a head on collision at 64km/h
- Side impact test – simulation of a 90 degree angle collision at 50km/h
- Pedestrian test – simulation of pedestrian injuries when struck by vehicle at 40 km/h
- Pole Test – simulation of car collision with a fixed pole at 29km/h
- Whiplash Test – simulation of rear end collision

In addition to performance requirements in each of the physical tests listed above, each ANCAP rating has requirements for a mandatory set of Safety Assist Technologies (SAT) that must be included and a minimum number of additional SATs that must also be included. The mandatory SATs required to receive a 5-star ANCAP rating for 2015 – 2017 are:

- Electronic Stability Control
- 3 Point Seatbelts for all front facing seats
- Head protection technology (side airbags) for front and second row seats
- Electronic Brake Assist
- Seat belt reminder for front and second row seats
- Top tether anchorages for NA class vehicles (2017 only)

Each ANCAP rating safety level has a required score for Additional SAT. One point is scored if the technology is installed as standard, while half a point is scored if fitted by the manufacturer but specified as an option*.

A full list of the Additional SAT considered by ANCAP can be found [online](#). (pg. 13)

The following key points regarding ANCAP ratings should be noted:

- ANCAP rating protocols are generally never applied retrospectively, once a vehicle receives a 5 Star rating it retains it for life.
- Increased requirements of ANCAP safety rating qualifiers over time may result in vehicles displaying a rating that they would no longer receive if they were tested under the current ANCAP regime*.

*A 5 Star rating for 2015 requires 5 points, 2016-2017 require 6 points.

**Changes to the calculation of ANCAP ratings can be seen in the ANCAP Rating Roadmap 2011-2017. -

Appendix C: Ergonomics and Adjustability Checklist

Item	Factors to consider	Comments
Ease of access	<ul style="list-style-type: none"> ○ Size, mobility of user population <i>variable size users will require more adjustability below.</i> ○ Hand holds ○ Distance to floor of vehicle 	
Ease of exit	<ul style="list-style-type: none"> ○ Size, mobility of user population ○ Hand holds ○ Visibility of the ground ○ Distance to ground, steps etc 	
Adjustability of seat	<ul style="list-style-type: none"> ○ Seat height ○ Backrest inclination ○ Lumber support ○ Tilt adjustment 	
Steering wheel	<ul style="list-style-type: none"> ○ Adjustable height ○ Distance from seat 	
Front window and pillars	<ul style="list-style-type: none"> ○ Visibility for users ○ Any restrictions 	
Rear window and pillar visibility	<ul style="list-style-type: none"> ○ Visibility for users ○ Any restrictions 	
Rear window and pillar visibility	<ul style="list-style-type: none"> ○ Convex or flat mirrors. ○ Are additional mirrors required? (e.g. add convex mirror) 	
Blind spot	<ul style="list-style-type: none"> ○ Size of blind spot (consider instructions on how to measure) 	
Additional technology	<ul style="list-style-type: none"> ○ Will the vehicle be fitted with in car cameras or navigational devices? Other equipment? Is there space for this equipment where it will not impact on visibility or the driver ○ Does the car offer Bluetooth hands-free or integrated voice activated technologies for mobile phones to ensure their legal use? If not, will you supply and fit a mobile phone cradle to ensure legal use? 	
Access to boot or back seat	<ul style="list-style-type: none"> ○ Will users be using the vehicle to transport suitcases, boxes, computers etc. ○ Will they be repeatedly opening or closing the door or boot? 	