TRANSPORT ACCIDENT COMMISSION

VEHICLE PURCHASE POLICY

- Safe Vehicle Purchase
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State Government Victoria

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The information contained in this booklet is also available on the TAC Bulletin boards (occupational Health & Safety) and via links within the Car Pool Booking program. This is an internal policy. Should you have any queries please contact the TAC's Road Safety branch.

SAFE VEHICLE PURCHASE

The TAC is committed to providing a safe workplace for all employees and ensuring that a safety culture permeates the organisation. Accordingly, Management undertakes to purchase and/or lease the safest available vehicles within reasonable bounds of affordability. This policy will apply to all cars leased by the TAC including pool and company leased (management) vehicles. The basic requirements for the TAC cars (purchased/leased or rented) are:

MANDATORY REQUIREMENTS

Passive safety (reduce injury in a crash)

- Highest possible score (minimum four stars) in consumer crash tests such as the Australasian New Car Assessment Program (ANCAP) and, if available, in real-world crash safety ratings
- Dual front airbags
- Side airbags, at least in front seats
- Curtain airbags or head protecting side airbags
- Three point seat belts in all seating positions

  Seatbelts with pretensioners in front seating positions
- Seatbelt reminder system, at least for driver position
- Adjustable headrests for all seating positions
- Curb weight 1300-1700kg, not 4WD, van or off-road vehicle
- Station wagons and hatchbacks fitted with cargo barriers

MANDATORY REQUIREMENTS

Active safety (crash prevention)

- Electronic Stability Control (ESC) which incorporates:
  - Anti-lock Braking System (ABS)
  - Traction Control
- Speed alert systems
- Appropriate daytime running light system
- Clear glazing – no added window tinting

Highly desirable and/or future requirements

New technologies introduced into the market will be regularly reviewed to identify vehicle features to be incorporated within newly leased vehicles. Such technologies include:

Highly desirable:

- Anti-whiplash systems, at least in front seats
- Good pedestrian protection according to ANCAP or proposed European regulation
- Intelligent Speed Assist System (ISA)
- Alcohol interlock
- Highly visible car color (preferably white)

Future Requirements:

- Following Distance Warning (FDW)

ENVIRONMENTAL REQUIREMENTS

The TAC is committed to the purchase/lease of the most environmentally friendly vehicles possible. The guidelines for purchase and/or lease of the TAC cars are:

- Most fuel efficient engine option (where practicable) for the chosen vehicle.
- Fuel consumption maximum below the average for new cars, currently 10L/100km or 12L/100km for two or more occupants. When a national target is set, the TAC should set performance standards below the national target. Non-aggressive driving styles i.e. little stop/start, overtaking and fast take-off activity, can substantially reduce fuel consumption and crash risk.
- Fuel consumption monitoring devices i.e. trip computer.

ECONOMY REQUIREMENTS

To ensure that the TAC complies with Victorian Government guidelines and that the cost to the TAC of implementing this policy is minimised, the following guidelines for economy are recommended:

- Good resale/trade-in value; and
- Low maintenance costs.

Most of the safety features should be available in models costing under $40,000.

CURTAIN AIRBAGS

Curtain airbags are designed to protect the driver's head in a crash.

Curtain airbags activate instantaneously, deploying from the top of the door rails above the side window.

They form a cushion between the driver and the window and stay in place if the car rolls over to protect the occupant's head.

Research conducted in the USA estimates that head protecting airbags can reduce driver deaths in the event of a side impact crash by close to 40% (Insurance Institute Highway Safety, 2006). Without them, in a side impact crash there is little to protect your head from striking the side of the car or rigid objects like trees or poles.

Curtain airbags should be a priority when buying a new car – they can make the difference between life and death.

How are curtain airbags different to other types of airbags?

Curtain airbags are one type of head protecting side airbags. There are other kinds too, such as combination head/torso designs.

Combination head and torso airbags mostly activate from the seat, but some types deploy from the door, offering you good protection to both head and body in side impact crashes. Combination designs are however less effective than curtain airbags in rollover crashes.

Most people have heard of driver airbags (or frontal airbags). While these come as standard in many cars, they do not protect you in a side impact crash. Also, side airbags without the combination of head/torso design only protect the chest and thorax area, not the head.

How dangerous are side impact crashes?

Side impact crashes at intersections account for approximately 22% of all major crash types when people are killed or seriously injured.

ELECTRONIC STABILITY CONTROL

ESC is short for Electronic Stability Control, a new safety technology that helps drivers to avoid crashes by reducing the danger of skidding.

ESC becomes active when a driver loses control of their vehicle. It uses computer controlled technology to help restore the car to its correct alignment, keeping it safely on track.

Why is it needed?

ESC reduces the risk of single car crashes by up to 30%. It assists in:

- correcting impending oversteering or understeering;
- stabilising the car during sudden evasive manoeuvres;
- enhancing handling on gravel patches, such as road shoulders; and
- improving traction on slippery or icy roads.

Australian research shows the benefits of ESC to be even greater in Four Wheel Drive and Sports Utility Vehicles. In these cars, ESC can reduce the chances of single car crashes by up to 68% (Scully & Newstead, 2007).

No other active safety device other than ESC has such potential to reduce single car crashes.

How does it work?

ESC works by using a number of intelligent sensors that detect any loss of control and automatically apply the brake to the relevant wheel, putting your car back on the intended path.

ESC combines Antilock Braking Systems (ABS), Traction Control, and Dynamic Stability Control.

Not all ESC systems are identical. The hardware is similar, but there are variations in how ESC systems are programmed to respond once loss of control is detected.

Is ESC different from ABS and Traction Control?

ESC incorporates all the components of ABS and Traction Control, with the additional benefits of Dynamic Stability Control.

While ABS and Traction Control only work in the driving (longitudinal) direction, ESC can help drivers to cope with sideways (lateral) movements which create instability. Unlike ABS and Traction Control, ESC is a holistic system that can control a car's entire movements.

Do you need training to drive a car with ESC?

No. Those who manufacture these systems say that ESC supports the driver but does not require changes to skill levels or driving styles.

Are there different names for ESC?

Yes. Some of the names that we know about in Australia are:

- Electronic Stability Program (ESP) – Holden, Audi, Chrysler, Mercedes, Saab, Volkswagen
- Dynamic Stability Control (DSC) – Ford, BMW, Jaguar, Land Rover
- Vehicle Stability/Swerve Control (VSC) – Toyota, Lexus
- Active Stability Control (ASC) – Mitsubishi
- Dynamic Stability And Traction Control – Volvo
- Vehicle Stability Assist – Honda
- Vehicle Dynamic Control – Subaru, Nissan

DAYTIME RUNNING LIGHTS

Daytime Running Lights (DRLs) are weak headlights that are illuminated during the day in order to make vehicles more visible and thus reduce their involvement in crashes. It is possible to fit vehicles with a device that will automatically activate DRLs when the ignition is switched on but is overridden by full strength headlights.

Initial evidence from studies into the effectiveness of DRLs indicates that the ability of drivers to see cars on the road during daylight hours is limited. Investigations of daytime accidents indicate that up to 50% of drivers report the cause as failing to see the other vehicle. For accidents at intersections this figure may increase to 80%.

A study conducted by Koornstra (1998) in the Netherlands estimated if the entire driving community used DRLs in the European Union, this would prevent:

- 24.6% of fatalities in multiple vehicle daytime accidents;
- 20% of casualties in multiple vehicle daytime accidents; and
- 12.4% of multiple vehicle daytime accidents.

The significant effect of DRLs on reducing accidents and injuries changes over different latitudes as natural light in different countries has different qualities. Based on latitude, Koornsta (1998) predicted DRLs would reduce multiple vehicle daytime fatalities by around 16% in Victoria.

The Insurance Institute for Highway Safety (1999) reviewed a number of studies from the USA, Canada and Scandinavia and cited that DRLs reduced daytime crashes from 6% to 37% for left hand turns, which is the equivalent of right hand turns in Australia.

DRLs have been found to increase drivers' peripheral perception of vehicles. It is also easier for drivers to estimate the distance to vehicles with DRLs.

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