

In this issue, which is an extract from the RACV Info Sheet No53, we look at Electronic Stability Control (ESC)

Electronic Stability Control (ESC) sometimes known as Electronic stability program (ESP), Vehicle stability control (VSC), Dynamic stability control (DSC) or Vehicle Stability Assist (VSA) - is one of the latest vehicle safety technologies aimed at preventing crashes. Recently, several studies have found that ESC is very effective at reducing crash and fatality rates by helping drivers to maintain control of their vehicles.

Components

ESC builds on the components already used for ABS brakes and traction control. It uses the wheel speed sensors and the ability to apply brake pressure to individual wheels but adds a steering angle sensor and a sensor that detects the direction of the vehicle. Some advanced systems also have body roll sensors that add more sophistication to the system.

Function

ESC continuously compares the driver's commands to the actual direction of travel of the vehicle. When the control unit detects a discrepancy, ESC intervenes by automatically applying the brakes to an individual wheel, and in some cases, reducing the engine power as well. The intervention of ESC helps the driver to maintain control of the vehicle.

Some ESC systems will intervene sooner than others. Some vehicles are fitted with switches that will either delay or completely remove intervention.

When do you lose control?

ESC starts to intervene when the vehicle travels on a different course than that intended by the driver. This typically occurs when a driver tries to turn very hard (swerve) or to turn on a slippery road. Then the vehicle may understeer or oversteer.

Understeer can be described as when the vehicle does not turn as much as the driver intended. This occurs because the front wheels have lost traction with the road. Oversteer is the opposite. It occurs when the vehicle turns more than the driver intends because the rear wheels have lost traction with the road.

What is the difference between ESC, ABS and traction control?

Where ABS and traction control are effective in assisting braking and acceleration, the addition of extra sensors enables ESC to offer the driver assistance in turning under hazardous conditions. Vehicles equipped with ESC will also feature traction control and ABS brakes.

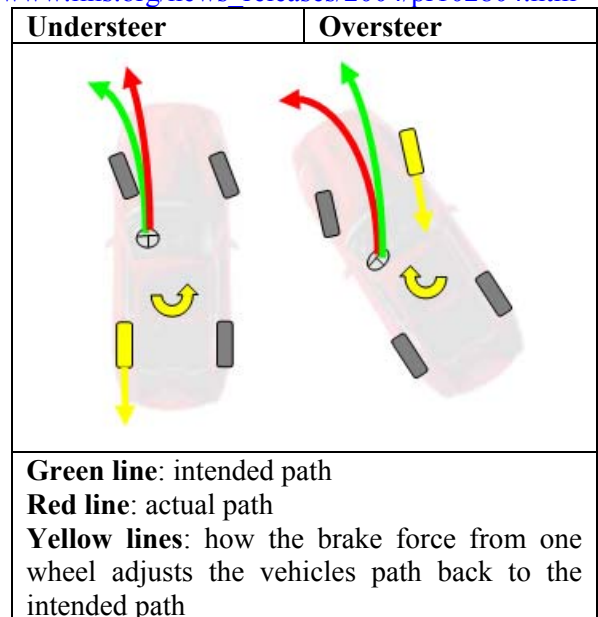
Vehicle equipment	Situation
Traction control	This systems prevents wheel spin under acceleration which helps to maintain steerability when accelerating
ABS	ABS helps a driver to prevent skidding during heavy braking and maintain steering control.
Electronic Brake Distribution (EBD)	EBD helps to balance braking forces between front and rear. In turn this helps to minimise braking distance and keep stability under light axle loads.
ESC	Builds on all the functions above but adds the ability to control skidding during cornering as well.

Introduced in the European market in 1995, ESC is now a standard feature on many makes in Australia including the Australian built cars such as the AWD Ford Territory and Holden Commodore Acclaim. ESC is also available as an option on many other vehicle models sold in Australia

Stability control as an option can cost anything between \$500 and \$2,600 as an option depending on the make and model of the vehicle.

How stability control works

http://www.iihs.org/news_releases/2004/pr102804.htm



Addendum: The AAA is in the process of developing a Communications Plan to promote SaferRoads aims and objectives. We will keep you advised of developments and activities related to this Strategy.