



Saving lives with sensitive technology



Tony Colley Accidents

worldwide will be reduced by electronics designed to cope with a driver's loss of control, writes
Tony Colley

Safety Fast' was the slogan used by MG sports-car drivers years ago. 'Health and Safety' seems to be the toast of the tee-totalling motorist in the pub today when a glass is raised in celebration of sobriety.

There have been many milestones in road safety over the years. The British Transport Minister Barbara Castle made safety belts compulsory, saving thousands of lives as a result. Airbags have become standard in modern motor cars. At first they were positioned in front of the driver and front seat passenger.

Lives were saved, but many

pointed out that, while lives were saved, the survivors were left crippled with horrendous leg injuries.

Curtain airbags and knee airbags have helped the reduction of injuries in collisions, and crumple zones protect occupants and pedestrians too. Clever weight sensors in the seat alert the driver if the passenger airbag is not activated.

Often, I have put a bag of shopping on the passenger seat of a new car, which causes the warning light to blink as the technology assumes the seat has an occupant.

In-car safety features are vital to the cause of reducing deaths in road accidents and the modern car provides a pretty safe environment for driver and passengers.

At a demonstration by Ford of electronic stability control (ESC) at Mondello Park Racing Circuit last week the advantages of this technology were presented in extreme circumstances.

Firstly, the confusion surrounding the acronyms should be cleared up as different brands refer to the technology with a different set of initials. So ESC (Electronic Stability Control) is the same thing as ESP, ATSC, DSC, DSTC, PSM, VDSC, VSA, VSC and ASTC. There – at least that is cleared up!

It is reckoned that 10,000 lives are saved every year with ESC in the US and more than 4,000 in Europe. Millions of injuries can be avoided, just as the number of accidents worldwide can be drastically reduced.

But what is ESC? Essentially it is a piece of highly-sensitive technology that is designed to cope with a driver's loss of control in extreme conditions.

For example, if a car goes into a skid in slippery or icy conditions the driver is likely to panic, brake hard and over-react by steering in another direction, using opposite lock. A car that is out of control is al-

most certainly going to collide with another car or stationary object.

The principal of ESC is to help the driver in such situations. If the system detects a deviation of the car's motion from the driver's intended path it will apply the brakes to one or more of the wheels, helping the driver to get the car back on its intended path.

'Understeer' and 'oversteer' are terms used frequently by commentators of motorsport. Understeer refers to how the car does not turn in as quickly as the driver wishes, straying off the intended path, particularly at speed. Oversteer is the opposite where the car will turn in too sharply. Both discrepancies reduce the amount of control the driver has over the car and ESC will introduce gentle braking on selected wheels to retain adhesion to the road.

A complicated system of wheel-speed sensors, a steering angle sensor, a 'yaw' rate sensor with integrated lateral acceleration sensor and a hydraulic unit with attached ECU and pressure sensor all combine to produce greatly improved control for the driver. Quite a mouthful, but it all combines to get you out of an otherwise likely collision.

In the tests, I was invited to drive on a wet surface 'figure of eight' at speed in two identical cars, one with ECS and the other without. The difference in behaviour and stability were noticeable.

The car without ESC would constantly slide out, requiring continuous correction of the steering wheel and use of the brakes in a staggered and inconsistent motion.

However, the car with ESC fitted had little roll and stuck faithfully to the steered line with virtually no slipping out of line.

Another test was designed to demonstrate how effective ESC is when faced with an unexpected object on the road re-

quiring sudden avoiding tactics.

The course was marked out with traffic cones. Without ESC I steered the car violently off course but found it almost impossible to rejoin the original path without striking the line of cones. This indicates how easily it can be to arrive in the path of an oncoming vehicle.

When the car with ESC was driven at speed towards such an object the system coped with the sudden deviation in direction and controlled the car throughout the quick turn.

Ford recognises the importance of ESC and has fitted it to its S-Max, Galaxy, Mondeo, Focus, C-Max, Kuga and diesel Transit models, with options on Fusion and Fiesta models. Market awareness has increased and ESC is appearing on more and more shopping lists.

Ford Ireland chief Eddie Murphy has called on legislators to make ESC mandatory on cars across Europe. Ford is the first manufacturer to standardise ESC in the compact family class in Ireland.

Arguing that ESC could prevent as many as 4,000 road fatalities every year in Europe, Murphy said he looked forward to the technology being viewed as a must-have item on the customer's shopping list. However, he said it is a brave commercial decision for a car-maker to standardise it in this class.

"The price-conscious marketplace makes it hard for a manufacturer to step out of line in this way. That Vehicle Registration Tax (VRT) is levied on the technology makes it all the more difficult. We've done it here, and I'm confident it will pay off.

"From the carmakers' perspective, I'd say to legislators, take this decision out of our hands! Make the technology mandatory. Raise the safety bar across the industry."

In Denmark there are re-

ductions in VRT on vehicles that have such safety equipment fitted.

Perhaps it might be an incentive that insurance companies could offer to customers who choose these safer options, especially when cars with ESC have been proved to be safer for drivers and passengers, and which cause or are involved in fewer road accidents.

Extra Sensory Perception is the dictionary definition for ESP (aka ESC). How apt a description for such clever, life-saving technology.



A demonstration by Ford of electronic stability control (ESC) at Mondello Park Racing Circuit