

No Compulsory Stability Control for 4WD Utes

When a move by the Victorian Government forced the Commonwealth Government bureaucrats to insist on mandatory electronic stability control (ESC) being fitted to all new passenger carrying vehicles by 2011, there were no dissenting voices heard in public. ESC is an accident avoidance technology that has been proved overseas to reduce crashes by up to 30 per cent.

However, no-one could have imagined that light commercial vehicles – even crew cabs – would be exempt from the new ADR. Mitsubishi has by-passed this edict, making stability and traction control standard on top shelf Triton 4x4s.

The Federal Chamber of Automotive Industries was quick to defend the Government's decision, with a spokesperson saying that ESC for commercial vehicles involved technical and engineering challenges. That, of course, is total drivel.



Light commercials in the USA and Europe have been using traction control (TC) and ESC for years. US-market Nissan and Toyota utes have ESC systems, but they're not offered in Australia.

We remember attending a combined HiLux ute/HiAce van launch in Japan a few years ago and asking one of the senior engineers why Toyota was discontinuing the all-independent suspension HiAce SBV: "We're still producing it," he said. "But for Europe only." "In Australia all you want is a cheap price and good load capacity – handling isn't important to you." What a bloke! He wouldn't have been out of place on the Burma Railway.

The NRMA sees the situation quite differently, arguing that of all vehicles on the roads light commercials are in most need of ESC.

The Australian Government's move also means that nearly all our utes will never achieve five-star NCAP ratings, because ESC is a mandatory part of a five-star classification. Just because the bulk of third-world standard, Japanese-brand, lousy value-for-money, Thai-built utes on sale here don't have ESC doesn't mean there are engineering challenges: it would cut into profits, that's all.

By way of comparison with the HiLux, here's a summary of the equipment fitted to all Toyota Tacoma utes in the USA: Toyota's 'Star Safety System' that includes ABS, EBD, Brake Assist, Vehicle Stability Control (VSC) and Traction Control (TC). An Automatic Limited-slip Differential, which uses brake intervention in place of a mechanical limited-slip to help reduce wheel-spin, is standard on all Tacoma models with the exception of those fitted with Off-Road packages, which score a mechanically-locking differential.

ABS, EBD, TC and ESC

The absolute stupidity in all this 'no ute ESC' business is that when you have ABS/EBD brakes it's very easy to expand the hardware and software to incorporate TC and ESC.

Anti-lock brakes (ABS) rely on an electronic control unit (ECU) and wheel speed sensors to monitor wheel speed under braking conditions. When wheel lock starts, the brake pressure at that wheel is released and reapplied by ECU control, in a rapid sequence.

Before ABS/EBD braking, utes relied on crude, mechanical load sensing proportioning valves to reduce rear axle brake line pressure.

Electronic brake distribution (EBD) takes the operation a step further, by altering brake pressure during non-locking brake applications to suit road and load conditions. If the vehicle is equipped with a steering wheel angle sensor and a lateral acceleration sensor ('g'-sensor), brake pressure can be varied to allow for turning manoeuvres while braking.

It's important to note that ABS and EBD operate only when the driver's foot is pressing on the brake pedal. ESC is different.

Although it's an extension of ABS anti-lock and EBD systems, ESC operates independently of the driver; significantly, without the need for the driver to use brake pedal pressure. The ESC components include a yaw-rate sensor, a lateral acceleration sensor, a steering wheel position sensor, and an upgraded electronic control unit (ECU). There's also a pressure accumulator on the brake master cylinder, able to energize the brakes, under ECU control, without brake pedal action.

The ESC sensors tell the ECU how rapidly and how far 'out of shape' a vehicle is getting, at which point the ESC control applies selective braking to one or more wheels to restore equilibrium. Generally, an understeering situation is remedied by rear wheel braking and an oversteer situation, by front wheel braking. The ESC system may also dictate a reduction in engine power.

Of course, the ESC system relies on tyre grip to carry out its braking actions, so it's not a cure for high-speed stupidity.

The estimated cost ex-factory for fitting ESC and TC to a ute that already has ABS/EBD? A few hundred dollars. And vehicle makers wonder why we get a tad cynical at times.