

Electronics plays an ever-increasing part in managing vehicle behaviour, particularly in emergency situations. John Challen reports

Maintaining stability

Current goals in the transport world remain, understandably, cutting costs and improving uptime. But developments in safety also continue to catch the eye of operators and their fleet engineers. Sophisticated technologies that can keep drivers and their vehicles out of trouble can sometimes do as much for a company's bottom line as a percentage point reduction in fuel consumption or even a better fleet management system.

With this in mind, it would be foolish for operators to ignore the latest technology to come out of firms such as brake systems supplier Wabco, which has now combined its hydraulic ABS (anti-lock braking system) with next-generation ESC (electronic stability control), in the form of its new ESCsmart. That development represents the first time in the commercial vehicle sector that both ABS and ESC have operated alongside one another. Its application will, in the first instance, be for hydraulic brake applications on medium-duty trucks and buses, where Wabco claims directional stability will be improved, with the system protecting vehicles from rollover, skidding and spinning.

Smarter systems

"Having successfully adapted these systems to meet the requirements of the North American market, ahead of the anticipated ESC legislation coming into effect in 2016, Wabco can now offer OEMs [original equipment manufacturers] the broadest range of options in safety technology," states Nikhil Varty, the company's president for the Americas.

Interestingly, ESCsmart is designed to be programmed on the vehicle assembly line, eliminating the requirement for calibration post-production or on delivery. There is also a function that allows self-learning – a continual process where the system monitors vehicle characteristics and adjusts itself in real time to keep driving towards optimal performance. Fleet

managers may also be pleased to hear that the hydraulic ABS with ESC setup requires one-fifth less mounting space than Wabco's existing system.

Closer to home, Knorr-Bremse recently revealed details of the systems it believes will make vehicles safer and more stable. First up is the latest generation of its electronic braking system EBS 7, which replaces its outgoing EBS 5. Now installed on the vehicle frame outside the cab, there is more space for access and maintenance, as well as more choice of integration points, given the connectors available on the frame.

EBS 7 essentially comprises ABS, traction control and ESP (electronic stability program) in one. So, compared with mere ABS alone, the new system offers not only faster response times, but also a different league of directional and acceleration awareness. Hence the claims for reduced stopping distances and significantly improved stability in real-world conditions.

But advanced safety systems will not be limited to tractor units: trailers and semi-trailers are also set to benefit from maturing technologies. Knorr-Bremse is aiming to be at the forefront, starting with the latest version of its EBS for trailers, TEBS G2.2. The company claims this will "offer extended functionality through the integration of ELC [electronic levelling control]". A second, trailer-based CANbus will help reduce system complexity, it adds, again making maintenance easier.

Then there is Knorr-Bremse's ST7-430 trailer brake: a two-piston disc brake designed for 22.5in wheels. The unit is targeted at 9-tonne trailer axles and, thanks to its disc and calliper weighing a full 5kg less than its predecessor, there is some trailer efficiency improvement.

Such is the pace at which technology evolves, expect to see further sophistication – with systems that detect potential problems and act autonomously, protecting drivers, their vehicles and other road users from dangers as they occur. And we're not just talking software, but also hardware – including camera systems and fully electric braking systems. **TE**