
# Iveco Le Dakar

**Advanced engineering from truck racing could soon turn up on a tractor near you, says Ian Norwell**

Back when drum brakes were the norm for HGVs, the Steve Parrishes of the truck racing fraternity were already using water-cooled disc brakes to haul six-tonne projectiles down from a speed-limited 100mph. The clouds of steam might have been entertaining for race-goers, but, behind the scenes, the development of disc brakes for regular haulage was underway.

When they did arrive, and brought dramatically extended friction surface life, with increased safety and stopping power, there was an answer to the question: 'What's the value in all this truck racing nonsense?' And the process goes on.

Towards the end of last year, Iveco hosted the departure of its rally team – Petronas De Rooy Iveco – for Argentina, where four Trakker-based and one Strator-derived truck have since embarked on Le Dakar 2012. "While these trucks are operating in extreme conditions, we have developed systems that could well have safety benefits for on-highway trucks of the future," says chief technician Bart De Gooyert.

Facing driving shifts of up to 650km and eight hours at rally speeds through South American deserts, the Trakkers' tyres and suspensions have been a focus. Tyres, for example, can still suffer punctures, so plenty of spares are carried on the support trucks. But tyre beads are bolted to their rims to prevent them from peeling off. This is likely when the central tyre inflation system drops pressures down to 0.8bar to attain a better sand footprint.

Meanwhile, suspension is naturally beefed up, with four Donerre dampers per axle and three leaf springs. Three under-chassis cameras monitor the entire drivetrain and suspension, so that decisions to stop or keep going can be made on the fly. "We can sustain a single leaf spring breakage, as the reaction arms can take the extra load, while the driver backs off a little for the rest of the stage," explains De Gooyert.

The chassis is also an all-welded affair, with lightweight cross members, adding strength. This development is unlikely to come to regular trucks; and ditto the six-point harness and roll cage.

As for the engines – Cursor 13s, from Fiat Power Train (FPT) Industrial – although at home in the UK Trakker and Stralis, these have been breathed on by the De Rooy team's engineers. Bigger turbochargers, higher injection pressures and lowered compression take them from 450bhp to 900bhp and boost torque to 3,500Nm. The truck's engine can have components replaced, but rules dictate that it must finish the rally with the same block. So a complete cylinder head is the heaviest spare engine part carried.

Then, looking at the transmissions, you might expect automation, in line with trends across the truck industry. However, this application is still the preserve of a ZF 16-speed manual. "The trucks spend so much time at high speeds, and have such big reserves of torque, they operate more like four-speed units, with the occasional extra split," reports De Gooyert.

The five Iveco rally trucks, six support vehicles and 38-man team left Mar Del Plata in Argentina's Atlantic coast on New Year's Day and the surviving vehicles will cross the finishing line in Lima, Peru, 14 days later.

Under-chassis cameras may sound like pie-in-the-sky, but radar proximity control, with full-pressure braking intervention, would have been viewed as even more outlandish to the driver of a Leyland Buffalo 30 years ago. And that has arrived. TE