

GLITZ and GRIT

Far from being detached from the reality of everyday vehicles, motorsport is the breeding ground for tomorrow's components, materials and lubes, reports Ian Norwell from Turin

Racetracks often claim to be the advance development workshops for highway vehicles. But just how gossamer-thin is that assertion, particularly in the down-to-earth world of commercial vehicles? Disc brakes are among the best examples of technology transfer, with their development at least partially attributable to the truck racing series of the 1990s and those crowd-pleasing clouds of steam billowing from early water-cooled examples. But, what else?

Well, if this year's Dakar rally – an 8,159 km event, blasting through the arid landscapes of Argentina and Chile – is anything to go by, we might suggest everything from advanced lubricants to turbochargers, fuel injection systems and clutches is in the mix.

Dakar Rally

Having last won the truck category in 2012, the team of Gerard De Rooy is competing in the 2015 event (as we go to press) with three Iveco trucks – two Powerstars and one Trakker. The Cursor 13 engine that powers Stralis and Trakker, has been comprehensively breathed on to create these rally monsters, each boasting an awesome 900bhp and 4,000Nm. "Of course, these are highly modified vehicles," says FPT (Fiat Power Train) engineering director Ricardo Buratti. "They need to be. But over 70% of the components in the engines Gerard De Rooy is using are standard Euro 6."

That said, key changes include big turbochargers, higher injection pressures and lower compression ratios. However, recognising that the forces to which these vehicles will

be exposed will quickly reveal any weak links, FPT senior engineer Jürg Spuler also points to a revised clutch arrangement. "We are using a Sachs clutch with a ceramic plate," he explains. "This is to give a higher degree of friction and to prevent any slipping that might be caused with the massive boost in torque."

Meanwhile, although these trucks only have to survive for 13 days in South America, we're talking extreme motoring, so lubes are important. That presents Petronas – the Malaysian oil and gas giant, familiar on F1 screens – with an opportunity to shine as headline sponsor for the Gerard De Rooy team. Hence its selection of the new 0W-20 heavy-duty diesel engine oil. Claiming an industry first by limboing down to an oil of this viscosity, Andrea Dolfi, global OEM liaison and motorsport manager for Petronas R&D, is confident it will stand up to scrutiny.

"This is now the standard fill for Iveco heavy product," he says. "It will bring better cold-start performance, and it will cut the time an engine takes to reach operating temperature, vital for reducing wear and tear."

"Petronas Urania Next 0W-20 commercial vehicle lubricant is qualified to Iveco standard 18-1804 TLV LS, and was developed for enhanced fuel economy, with proven fuel savings up to 2.5% in specific vehicle operating conditions," adds Petronas head of technology Dr Andrew Holmes.

There are caveats, but the reduced friction on internal rolling and sliding surfaces must bring wins.

That said, retaining lubricity with such a low-viscosity oil is certainly a challenge, and fleet engineers may have to recalibrate their views on 'thin' oils, particularly when they first see a hot drain.

Incidentally, FPT's Spuler says the vehicles' discs are expected to last the entire rally, although the pads will be changed at the end of each stage. **TE**

