Investing in oil

Are there really transport engineers who still regard lubricants as a necessary evil? If so, emissions legislation and telematics capable of measuring any oil's contribution to fuel economy will herd them into a corner, suggests Ian Norwell

It is the lifeblood of any diesel drivetrain, but attitudes to oil – and particularly its quality, type and price – are taking time to change. That's despite the evident requirements of increasingly sophisticated and tighter-tolerance engine technology, driven both by heavy-duty diesel engine emissions legislation (Euro 5 and now the march towards Euro 6), and the industry's thirst for better truck efficiency and economy.

The fact apparently remains that substantial increases in the price of oil are blinding some fleet managers to new lubricants' contribution not only to drivetrain longevity, but also reducing maintenance and fuel costs.

Maybe their reaction is not surprising when you consider that an engine oil fill now costs up to £400, but it's worth considering that, stretched over the oil's working life, that's only around 0.25p per 100km. To say that the price of diesel puts oil in the shade is to massively understate the case.

Dave Spence, Chevron Lubricants' channel marketing manager for Europe, paints a more positive picture of the nation's transport engineers, asserting that oil Luddites are getting harder to find. "It's true that eyebrows were raised when oils started getting thinner and additives changed the colour," he concedes. "Some perceived LV [lower viscosity] oil as not quite up to the job. Extended drain trials with synthetic oils in the 1990s also caught a few people out, because oils were being pushed beyond their ability. But that has gone with the advent of high-spec LV oils and their naturally extended drain periods."

Acceptance of more sophisticated oils is also being forced by truck manufacturers' recommended oil standards. Those may, in turn, be driven by emissions rules, but, with fuel economy gains and warranty considerations, it's clearly counter-productive to look elsewhere.

Doubters only have to review some of the oil companies' trials. "Without sounding arrogant, we know roughly what the results will be before [LV oil] trials start," comments Scott Wainwright, key account manager for Shell in the fleet sector. "But it's vital that customers see them for themselves." That said, he cites one 700-truck fleet trial that ran a standard 15W40 mineral oil against Shell Rimula R6LME 5W30 for 12 months and gained a 1.5% fuel advantage with the latter.

Albeit small, that's a convincing bonus from LV

Lubricants deliver for DHL

Logistics giant DHL, which runs a 500-strong mixed fleet of Volvo, DAF, Renault and Mercedes tractor units on the Iceland contract, adheres strictly to each OEM's oil specs and service sheets. "We have a 13-week maintenance regime and I wouldn't consider anything other than the specified oils," states workshop manager Mark Kelman.

With fleet replacement at six-year intervals and varying operating conditions, he also tailors oil changes in line with the duty cycles. "We don't have engine failures here, but, if we did, and we had been using cheap oils and filters, we'd probably deserve them. We'd also be on soft ground, asking for any goodwill from the OEMs," he says.

Meanwhile, on fuel, Kelman says that DHL has introduced additional fuel filters to cope with the increasing strength of biodiesel blends.

ACEA oil specifications

The ACEA (Association des Constructeurs Européens d'Automobiles) specifications of E7, E9, E4 and E6 set the lube standards. They start at modest mineral-based oils and work their way up in complexity, and cost, describing the characteristics required by almost all heavy-duty diesel OEMs, in terms of wear protection, engine ageing behaviour, cleanliness and emissions.

E6 is at the top, when it comes to sophistication and expense, although both E6 and the latest E9 specs apply strict limits to ash-forming substances. However, sorting your way through the various specs and standards is not easy.

For example, E6 oils are described as designed for use with low sulphur diesel fuel on heavy-duty engines equipped with EGR (exhaust gas recirculation) and SCR (selective catalytic reduction) systems, with or without DPFs (diesel particulate filters) in the exhaust stream – although they are also strongly recommended for engines fitted with DPFs. That said, the description for E9 oils is similar.

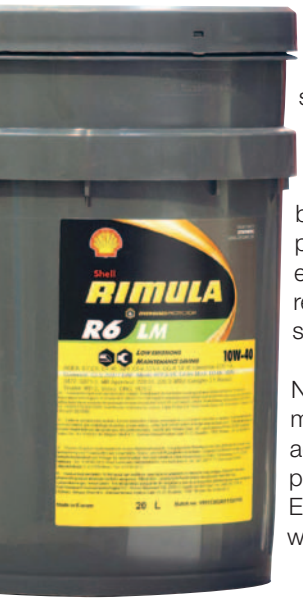
Either way, the point about the DPF – and all Euro 6 trucks we've seen so far have one – is that it drives a requirement for low-SAPS (sulphated ash phosphorus sulphur) oils. Both E9 and E6 comply, although the latter specification demands lowest SAPS.

The bottom line: departing from engine manufacturers' guidelines, in an effort to economise, is a very risky strategy, with warranty implications.

oils – and most fleet engineers would agree that, if you can measure such a benefit, you should take it. Additionally, it's not just about fuel: those with a green agenda are also ticking the box of reduced CO_2 emissions.

Available intelligence

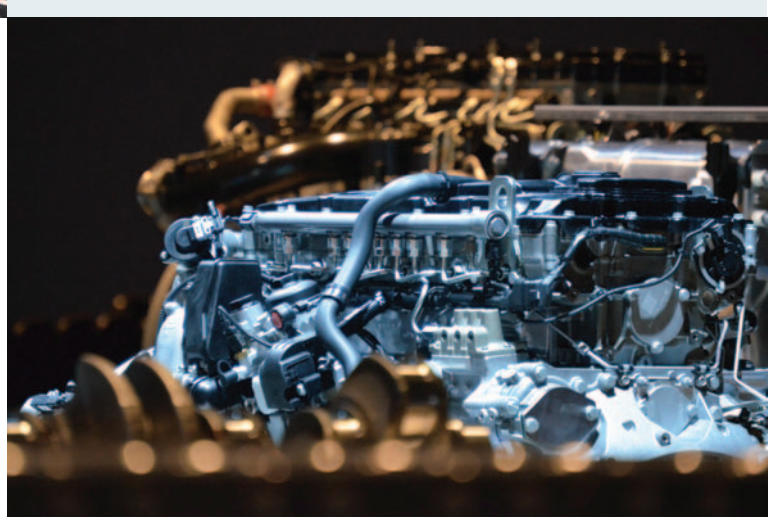
Meanwhile, for those fleet engineers who still feel they are being driven against their better judgement to higher, more costly, oil specs, there is now ready access to tools that can accurately measure their value, argues Chevron's Spence. "With OBD [on-board-diagnostics] and telematics reports that are getting very sophisticated, fleet managers can see the results right in their own office," he says. "And the variables of different drivers, routes and loads can also all now be factored in. Data that was previously the preserve of test engineers is now there for all, with readily available OEM telematics software."



So what do the OEMs say? Nick Blake, sales engineering manager from Mercedes-Benz, advises that his firm's factory-fill oil philosophy has been modified for Euro 6. He also suggests that, when buying new trucks, fleet engineers should check which oil their chosen manufacturer uses as a first-fill.

"A top quality fully synthetic or LV oil is not necessarily good news for a brand new truck," contends Blake. "We don't recommend its use until after the engine is run-in, at which point it does have a valuable role to play. All operators know that a truck does not reach peak performance on fuel economy until it has a few months' work behind it." And hence, he says, the sense in varying the lube spec early on.

On its current OM457/501 engines, Mercedes-Benz uses Shell Rimula Ultra SAE 5W-30 as a factory-fill, for just this reason. Similarly, with the

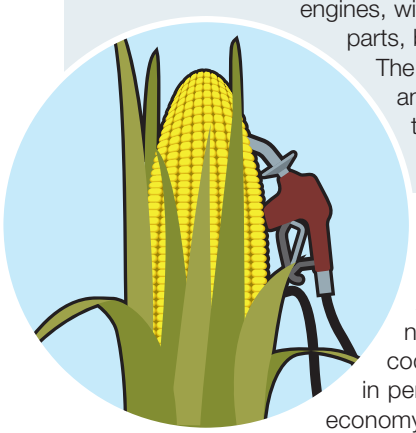


Euro 6 engines from Mercedes-Benz, such as the OM936 (above), are getting a new first-fill oil from Shell

Biodiesel deposits

What about hauliers' latitude for modifying the fuel, in terms of biodiesel blend? Social considerations of the conflict with food production aside, biodiesel – which has had a chequered history – has a limited fan base, primarily because it risks shrinking oil drain intervals, tends to clog fuel filters and generally offers a lower performance per litre of fuel.

Of more concern to oil companies and OEMs alike, however, is the persistent issue of internal diesel injector deposits (IDID), which rob engines of performance. Deposits may have been less critical in older engines, with greater tolerances between moving parts, but that was then and this is now. The solution is expected to lie in yet another diesel additive. And with fuel trials underway, Chevron for one is among those searching for a cure.



strictures of Euro 6, the engines in this German OEM's new Actros and Antos truck ranges are getting a newly developed first-fill, specifically coded by Shell to address the breaking-in period issue, without compromising economy or longevity.

That said, lube developments aren't only for the power plant. Away from the firing line and the heat of combustion, oils for gearboxes and rear axles are often overshadowed, but changes are afoot here, too. With gearbox oils already running for 300,000km and beyond, OEM and oil company engineers agree that a filled-for-life philosophy is dawning, and draining a vehicle's gearbox or rear axle will soon become another deletion on the maintenance sheet.

However, for now, they do still need attention – and at these long-distance change intervals, it makes even less sense to deny the value of high-quality lubricants with tighter specifications and more advanced additives.

Risky strategy

Absolute economy will only come from paying attention to every element between the diesel tank and the tyre tread – which begs the question, are some workshops that use cheap and cheerful brands potentially putting your vehicles and business at risk?

The evidence for following oil spec guidelines is overwhelming and the technology to prove their impact on fuel economy is there for the taking. Why wouldn't you go ahead and take it?

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