

SUSPENDED SENTENCE



Developments with running gear are not as few and far between as many might believe. Steve Banner examines improvements aimed at both trucks and trailers

Truck engineers may develop a technical innovation, but that doesn't automatically mean hauliers should specify it. In the end, the test has to be whether or not the new system offers a commercial benefit. "Engineers may love it and doubtless whoever is supplying the component will love it, too," says Iveco product director Martin Flach. "But if you, as an operator, aren't likely to make any more money out of having it, then it's not worth a light."

That argument might well be advanced, for example, against independent front suspension - something pioneered on volume trucks by Volvo (pictured above), although not yet available on its right-hand drive trucks. Similar technology has also been fitted to DAF's prototype LF-based Future Truck chassis prototype 12-tonner, although marketing manager Phil Moon concedes the company does not view such a

suspension as commercially attractive.

Offered complete with air bellows, Volvo's independent front suspension has been proven to improve ride, handling and overall stability, while also allowing a lower ride height. "Truck front suspensions have been refined over the years but they're still crude," insists product manager John Comer. But critics - many of whom are admittedly not in a position to fit it - are not convinced of its value in haulage.

SOPHISTICATED STEER

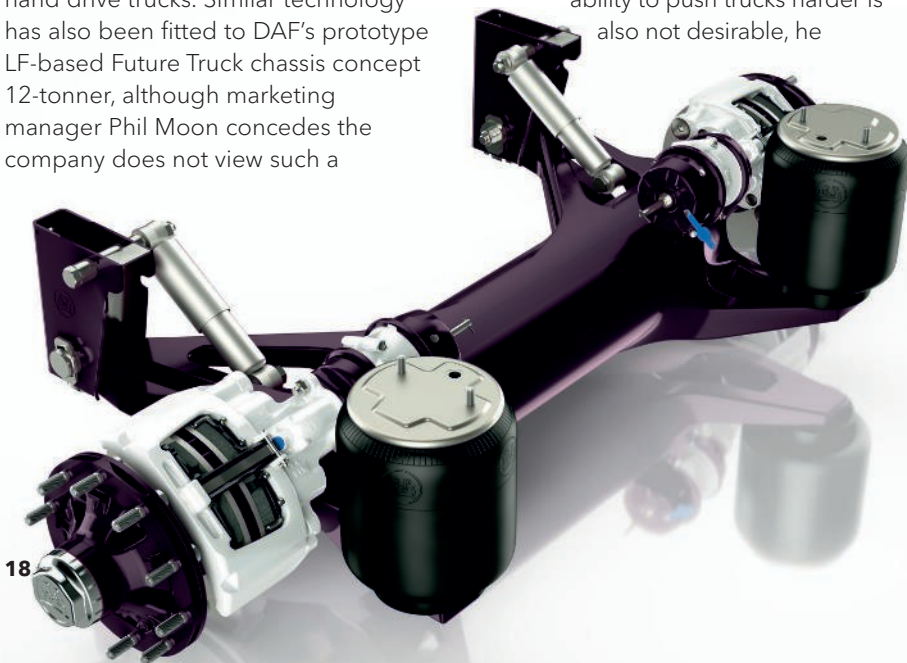
"The handling improvements it delivers may be great if you're into truck racing, but are perhaps not what you require if your drivers are delivering parcels," comments Moon. Giving drivers the ability to push trucks harder is also not desirable, he

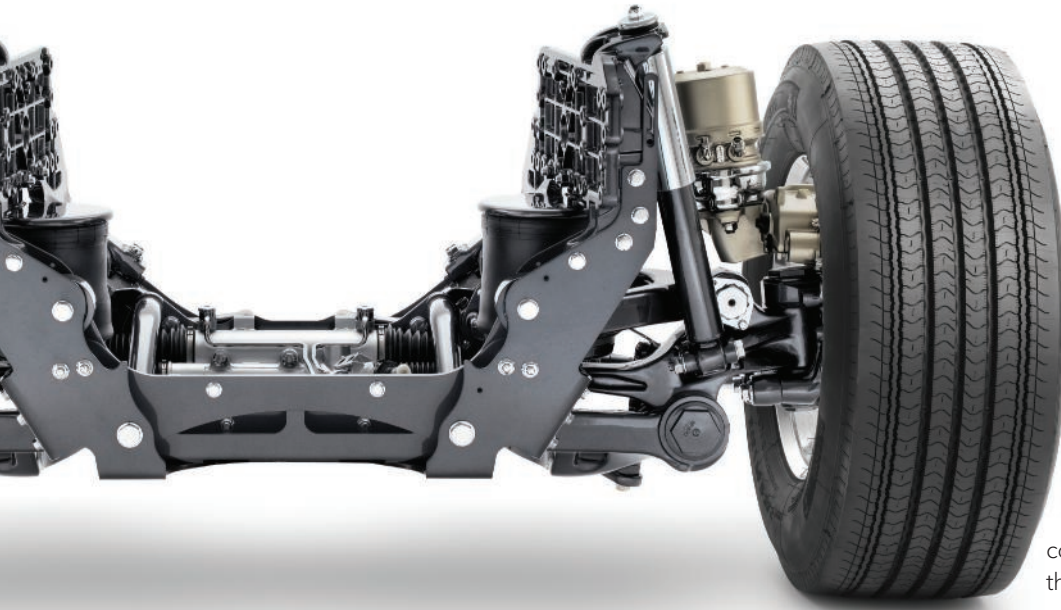
contends. And Flach remarks: "For all its crudity, the beam front axle has served us well. It continues to do so and is cost effective. Also, with independent front suspension you don't get the same sense of cornering speed."

Maybe, but Volvo points out that its new suspension is combined with rack-and-pinion steering - so offers ample feedback. Furthermore, it can be specified in conjunction with another newish technology: dynamic steering. The latter employs an electronically-controlled electric motor mounted on the steering shaft. Working with the existing hydraulic power steering, it delivers extra power at low speeds, but also compensates for the effects of side winds and potholes at higher speeds.

"This can be fitted to both single and dual front steer axles and dampens any vibrations coming up through the steering column," explains Comer. It also reduces the steering effort required at low speeds. That makes driving less tiring, not least because it reduces the strain on muscles and joints.

The net result: a healthier, happier and potentially more productive driver - and one who might stay loyal to the thoughtful employer that invested in his or her wellbeing. At a time of acute driver shortages, that is a convincing argument, and it might





company, which allows a concrete mixer to carry 0.1m³ more concrete. And while that may not seem much, multiply it by the work a mixer handles in a year and it rapidly mounts up.

A further advantage is that glass-fibre composites are far more resistant to corrosion than steel used in conventional axles. "However, we're also working on improvements with conventional materials and technologies that significantly reduce running gear weight. We'll be presenting these at the 2016 Bauma and IAA shows, in Germany," says a spokesperson.

ECO Vision should be more than capable of coping with the hammering that trailer axles have to endure, says ADETE managing director Dr Markus Steffens, especially if the operator regularly ventures off-road. Acquired by BPW just over a year ago and having played a key role in the ECO Vision project, this company now concentrates on the development and introduction of lightweight components using synthetic and fibre composites.

"ECO Vision is about fulfilling the high demands imposed by load changes, vibration and impact loads on uneven road surfaces," states Steffens. "It is also designed to cope with external influences, such as rock falls."

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similarly support the provision of independent front suspension.

However, there are other refinements. Steering column vibration can also be reduced by Volvo's tandem axle lift. If a truck is on, say, forestry work, the driver can disengage the second driven axle and raise it when the vehicle is on the highway, returning empty to the forest to collect another load of timber.

One driven axle generates less vibration than two, Volvo points out. Fuel consumption also falls by up to 4% when one is disengaged, continues the firm, and raising an axle means reduced tyre and suspension wear - meaning useful cost savings. It can boost traction, too, in slippery conditions.

What's more, the turning circle tightens. Indeed, tridem eight-wheelers are becoming more popular in Britain not least because of their manoeuvrability benefits, according to Comer. "You can cut your turning circle by 25% but getting the wheelbase calculation right is critical to ensure the weight distribution is correct," he advises. And DAF's Moon adds: "A tridem gives you the turning circle of a 6x4, but the payload capacity of an 8x4."

Returning to the subject of traction, though, several manufacturers now offer the option of an auxiliary drive for the front axle to give, say, 8x2s a bit more

impetus in the mud without opting for 8x4s. Renault Trucks, for example, has Optitrack (pictured in use, below right), which comprises two hydraulic motors fitted in the front wheels which can be activated at speeds up to 25kph.

The availability on right-hand-drive chassis of such systems is at present limited, but Flach believes sufficient demand may be there on this side of the Channel. He would like Iveco to offer it as an option in the UK, commenting that 6x4 and 8x4 configurations favoured by tipper operators are often unnecessary these days.

Why? Flach points out that one of the first things builders do on big housing estates is put in access roads. That means there is no need for two driven wheels to plough through mud. And the extra weight of a second drive axle means reduced payload, too.

TRAILER GEAR

Manufacturers of trailer running gear are also continuing to improve technology. BPW's air-sprung ECO Vision (pictured left), for example, is set to go into series production in 2018 after trials scheduled for this year. In this case, the entire axle beam, including swinging arm, is constructed from a glass-fibre reinforced composite material. That has helped cut weight by 20%, or around 80kg, says the