

Trailer *blazers*



As the DfT unveils its consultation on increasing the maximum combination length by 2.05m, Brian Tingham examines the likely impact – and those of other developments

With the Department for Transport finally launching its public consultation into the viability of longer semi-trailers (30 March), Dick Denby, Eddie Stobart, Wincanton, Cambridge Vehicle Dynamics Consortium and many others in the evangelist movement must be punching the air.

The coalition's consultation proposes a long expected 2.05m increase in combination length – taking the maximum to 18.75m and increasing the available trailer platform to 15.65m – but within the existing weight limit of 44 tonnes. It follows publication of independent research, led by WSP Development and Transportation, which confirms longer trailers' significant potential to cut carbon and journey numbers, while also improving safety – flying in the face of environmentalists' reservations.

Roads minister Mike Penning believes that hauliers transporting lightweight goods – that cube out long before they gross out – could increase capacity by 13%, cutting carbon emissions by 100,000 tonnes per year. Estimates from the transport industry suggest a commensurate fuel saving of up to £60,000 per truck.

"These proposals would allow haulage firms to use one larger truck where previously they may have needed to send two vehicles," explains Penning. "This will help to make our industry cleaner and greener, as well as allowing businesses greater flexibility, without compromising safety."

Unsurprisingly, his enthusiasm is shared by many

trailer manufacturers and operators. "This is great news for the industry and also for UK trailer manufacturers. Operators will also welcome the decision, as it's an opportunity for some of them to operate more efficiently and, of course, reduce fuel bills and carbon emissions," comments Mark Cuskeran, SDC Trailers' managing director.

Wincanton technical services director Dave Rowlands adds: "This will not only take heavy vehicles off our roads, but also provide significant savings and productivity improvements." And he makes the point that, despite longer trailers' greater weight resulting in up to 2% greater fuel usage, that is marginal, set against the capacity increase.

Meanwhile, Stobart Group chief operating officer William Stobart – whose firm has been developing extended semi-trailers with SDC – calls it "a very positive step for the future of road transport in Great Britain". Stobart has two prototypes: one, a full length 15.65m trailer, with two steering rear axles; the other, what it terms a "mid-length extended trailer" at 14.55m, with one steering rear axle.

Stobart suggests the first will result in a 15% capacity increase for pallets and 20% for cages – up from 26 to 30 1,000 x 1,200mm pallets, and from 45 to 54 UK retail cages. Meanwhile, the second would result in capacity gains of 8% for pallets and 13% for cages – from 26 to 28 pallets or 45 to 51 cages.

"Research within Eddie Stobart, using our longest prototype, suggests this would be best suited to 'closed loop' operations for fast moving consumer goods," says Stobart. But he adds: "We believe the

Above: Eddie Stobart has built two prototypes, with SDC: one, a full length 15.65m trailer, with two steering rear axles; the other, what it terms a "mid-length extended trailer" at 14.55m, with one steering rear axle

mid-length extended trailer could become the industry standard. It is lighter, so still delivers 28 tonnes of carrying capacity, making it more flexible for general haulage, and it is less costly to build." What's more, it has already been approved by MIRA (Motor Industry Research Association).

Other innovations

But there are other developments with trailers that are also capable of improving productivity and cutting fuel. Don-Bur marketing manager Richard Owens points to: his company's thin, lightweight Blade HDPE (high density polyethylene) panels, which allow greater cube and protection; lightweight UPM bonded flooring; and redesigned aluminium constructions that have already broken the 6 tonnes barrier for a full-length tri-axial curtainsider.

Don-Bur's latest – for Lafarge, with aluminium side raves and front bulkhead, steel cant rails and runners, as well as aluminium wheel rims – weighed in at just 5.82 tonnes. Owens says the firm is now targeting 5.0 tonnes, using carbon fibre alongside light weight axles and running gear.

The other big development, however, is clearly aerodynamics – and not just the now iconic Teardrop, launched in 2006. Last September, Don-Bur unveiled its Mk2 Teardrop, with an additional tapered rear frame, designed to help re-pressurise the partial vacuum created by the passage of a semi-trailer back end – particularly dry freight double-deckers, typically measuring 4.88 x 2.55 m.

"We've gone beyond tapering the trailer roof, to tapering the sides, which meant re-engineering the rear pillars and introducing an air ram, using radiused corners," explains Owen. "Also, following work with Coventry University, we've streamlined air flow under the trailer, keeping it as low to the ground as possible by blocking it in front of the landing legs and providing a curved under-skin that, again, tapers and re-pressurises the back end."

Steering or lifting axles

With the government consultation on longer trailers now underway, transport engineers can expect to see more in the way of steering trailer axles – but also lifters. Knorr-Bremse is licking its metaphorical lips as it launches iCorner, designed to adjust air bag pressure and so shorten the effective wheel base by 650mm to improve manoeuvrability, without the complication of a steered axle.

Andy Lumley, trailer account manger for Knorr-Bremse, explains that its new unit works with the company's TEBS G2.1 braking system, which interfaces with the trailer's air suspension system. The device continuously monitors inputs from wheel speed sensors to establish when the vehicle is entering a tight curve. It then lowers the lift axle at the front of the bogie, so reducing the apparent wheelbase of the trailer and hence also the turning circle of the combination.

A 5% speed difference activates iCorner, which also monitors the air suspension pressure to check axle and bogie loading. Lowering and raising of lift axles is also controlled, such that axle loading does not exceed 130% rating up to 20mph.

Incidentally, the unit can also be set up to reduce tyre wear and then minimises the number of axles in contact with the road, in line with weight. It also works with the firm's new iCargo, which adjusts trailer air bag pressures to move the effective fulcrum point and bring the load on the tractor drive axle within legal limits.

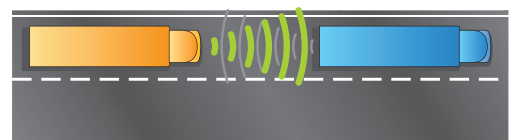
On a practical note, he points to the fact that the tri-axial running gear has been deliberately left clear for maintenance. "We've added a rear scoop that collects turbulence from the axles and directs it into the rear negative pressure bubble," explains Owens. Incidentally, making that work also involved redesigning the under-run, with a tubular assembly that incorporates lighting and the licence plate.

But, clever though these are, it's not just about general improvements: there is also a lot to be said for pushing the boundaries. A little over one year ago, APC Overnight, for example, started trialling a customised Teardrop Mk1 double-deck curtainsider, fitted with an innovative lifting deck. According to

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operations director Syed Ziaullah, his resulting EcoStream semi-trailer enables safer, but also quicker and much more flexible, loading and unloading – also helped by an option to use the rear doors where access to APC’s docks is an issue.

“The upper lifting deck is lowered for loading, and then raised, so that the cages fit under the pelmet, to allow full access to the area beneath. It not only improves safety, because no one manoeuvres loads at height, but also speeds up the process,” explains Ziaullah. That meant adding floor reinforcements and increasing the height from 4.88m to 4.92m. But the results are impressive: “Our time trials show it now takes just eight minutes to unload, compared to 15 on a double-deck box trailer.”

Bespoke designs

He’s not alone: nearly a decade ago, third party logistics provider RCS Logistics worked with Don-Bur on a curtainsider for its distribution contract with The Delivery Co. These were fitted with the firm’s now famous multi-positional, three-tier mechanical

lifting decks that could be adapted to suit practically any load – in its case, conventional paper pallets and large-format plastic sheets.

Brian Moran, operations support manager at The Delivery Co, reckons that design helped to shave 1,000,000km per annum off haulage costs. Now, he has spent £100,000 on three upgraded versions: “More than 10 years on ... we have introduced the Teardrop version of the original ratchet deck trailer.”

APC’s Ziaullah comments that such experiences demonstrate the importance of transport managers thinking outside the box. “It’s well worth evaluating your specific requirements – the problems and limitations you experience – rather than just ordering what trailer manufacturers offer,” he concludes.

He also says that aerodynamics are the way forward for APC Overnight, which now has 11 running with DAF CF85 Euro 5 tractor units and intends to place further orders this year. “Compared to a standard, square front double-deck combination, giving 8.2mpg, the Teardrop returns 9.7mpg – which is another big saving.” **TE**

Don-Bur’s latest light-weight, full-length tri-axial semi-trailer, for Lafarge, weighs in at just 5.82 tonnes

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