

To demo or not to demo

It's easy enough to work out the fuel economy of an operator's existing fleet, and the OEMs will happily supply estimates for their products under various different test conditions. What hasn't always been easy, however, is making the two match up. Lucy Radley seeks best practice from three operators

Elddis Transport has a fleet of around 160 trucks, most of which are based at the company's head office in Consett, Co. Durham. Where possible, it will bring in a demonstrator before buying, but this presents its own challenges. A lot of its trailers are high (such as the SDC Freespan, pictured below), which means having the correct air kit fitted to improve aerodynamics, and near-impossible to do with a temporary vehicle. Fortunately, however, it has a couple of contracts which use standard-height curtainsiders.

"These run with the same driver and same load, every day, and we have a number of different makes of vehicle on them," managing director Nigel Cook states, "so we always run demonstrators on those operations." Rather than rely on the numbers recorded through the vehicles' CAN-Bus network, fuel readings are taken 'tank-to-tank', along with a manual note of the mileage being recorded. This removes the two main causes of variance: how much fuel the vehicle 'says' it's using versus what was pumped into the tank, and how many miles it's actually covering.

"That trial gives us a steer, and because we have other different vehicles doing the same job on the same day, we can take out the weather factor

too," Cook says. "If it's pouring with rain or windy, that throws your fuel economy straight out of the window, so that part is important too." This is why he also doesn't concern himself with manufacturers' reported figures. "They're almost irrelevant, because we know there are so many other parameters that make a difference."

Experience is the other weapon in Elddis' armoury - and not just its own. "We're members of the RHA and the Transport Association [now Logistics UK], and if I want to know about a vehicle, I'll ring somebody up who's running a lot of them," Cook says. "They'll then tell you the warts and all about how they perform in their fleet - the good, bad and indifferent."

He believes it's important not to get too fixated on fuel figures alone, however. "Fuel economy is one of the biggest things to consider when buying



a vehicle, but you've got to look at the overall life cost as well, and you only get that with experience," he points out. "Its importance also depends on the type of operation and the mileage: for a local, rigid-bodied vehicle which doesn't go far it is a factor, but maybe not as much as for a double-shifted, high-mileage tractor unit."

NOT A FAN

Tyrone Lanaway, engineering manager at nationwide multi-temperature network, isn't a fan of demonstrator vehicles: he finds it very difficult to obtain one with the specification that the company would choose. Instead, it uses other sources of information. "We rely heavily on speaking to other colleagues within the industry, fleet engineers, and reading reviews," he says. "LinkedIn has been a godsend!"

Despite its considerable operational





NEW TESTING CENTRE

Another option for operators looking to quantify their fuel figures is vehicle testing house UTAC CERAM Millbrook (which has a new name following its merger with the French organisation of the same name last year). It has worked with fleet operators to develop test cycles and run them on its chassis dynamometer, which was recently expanded.

"Different applications lead to developing different duty cycles, and we can use that to program those into the dyno facility, and then run it automatically," says John Proctor, technical and special products director. "The benefit is that it's not a real-world result, it is in a lab, but it's an accurate and repeatable way to compare two different vehicles, or two powertrains in the same vehicle." That could even include simulating both summer and winter operations, as the chamber's temperature can be adjusted.

He continues: "Something else we've done for different customers is looking at the effect of old and new tyres, and understanding the range implications of that, and on fuel economy. And the implications of aerodynamic features on long-haul trucks. We have a coast-down facility, so can understand the impacts of these on the resistance of the vehicle travelling through the air [on a closed outdoor track], and then program that into VTEC to understand the fuel-economy impact."

In March, the test house officially opened its new four-wheel drive VTEC (variable temperature emissions chamber) facility, allowing truck engineers to conduct a wider range of powertrain tests on larger vehicles than before.



experience, it sometimes still encounters unexpected hurdles. "We have operated a fleet of Scania's of the previous model, a fleet of Mercedes and most recently a fleet of the newest-model Scania's," Lanaway says. "The newer Scania's [pictured below] are considerably better than the older models, and they're supposedly the same engine! Yes, there have obviously been little tweaks made to it, but we were quite surprised and happy!"

He also relies considerably on the expertise of the salesperson when buying. "For instance, we changed the differential ratio many years ago, as we discovered that with the standard ratio, the vehicle tended to jump in and out of eleventh and twelfth gear when climbing certain hills," Lanaway explains. "By keeping the revs slightly higher, this meant that the vehicle was running more smoothly, which has resulted in improved mpg. A gamble, but it worked."

Making changes such as this involves a degree of risk, which occasionally backfires. When Euro VI was initially introduced, Nagel Langdons operated vehicles from five different vehicle manufacturers, just to test them all. Each choice was depot-specific, too. "We got seriously burned with one make of trucks, but everything else was

very similar," Lanaway says. He does, however, think that the figures OEMs produce have massively improved.

BETTER NUMBERS

"Going back 10 or 15 years the figures appeared somewhat inaccurate, but nowadays we find them to be fairly precise," he reckons. "If anything they're rather more conservative - that's what we're finding with the latest Scania's, although we don't tend to rely too heavily on this data." Lanaway remains very cautious about the figures created by a vehicle's telematics. "We always take our own figures as well as what we obtain from the Fleetboard and Scania C200 reports, comparing what we're actually putting in to what the CAN-Bus is telling us," he adds. "That way we can see whether fuel has been misused, but also see just how accurate the CAN-Bus is; I don't think it takes into consideration tyre wear, for example."

Of course, it's important to remember that not all operators buy their vehicles new. Purfleet-based container haulier KBC Logistics now has 300 Mercedes-Benz Actros tractors, all of which were bought at two to three years old (pictured, p20, without trailers or the Connexas trailer tracking solution it recently

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Dave Ashford

purchased). "We're geared up to do all our own maintenance and repairs," says transport director Dave Ashford. "So sticking to one marque makes my life a whole lot easier."

That doesn't mean to say he's never trialled anything else, however. "I had a Scania demonstrator which was, at the time, two to three years old, because everyone was telling me how wonderful they were on fuel," Ashford recalls. "And actually, there was next to nothing between the two, on like-for-like engine performance."

A LORRY'S A LORRY

"I'm a bit old-school, and I think a lorry's a lorry," he continues. "You can make a huge difference to a lorry's fuel economy by just putting someone different behind the wheel, in all honesty. I can put two different drivers in the same truck, and one will return excellent fuel figures and the other will be rubbish."



Ashford agrees with Nigel Cook at Elddis when it comes to the irrelevance of OEM-produced test figures. He observes: "In my business, one truck might do six tonnes of toilet roll to the Midlands in the morning, then 27 tonnes of water to the other side of London in the afternoon. So to actually

ascertain what one truck is or isn't doing is next to impossible anyway!"

He likens the whole issue to buying a new car: after all, how many of us scrutinise the published fuel figures while doing so, when there's so much real world experience out there on the internet to be called on instead? [TE](#)

VION SET TO ACHIEVE 8% EMISSIONS REDUCTION

Northern Europe foodstuffs producer Vion has set itself the aim of reducing its emissions in German meat distribution operations by eight percent, which means cutting fuel consumption too. To achieve this goal, the company has started a pilot project with Mercedes-Benz Trucks, trailer manufacturer Schmitz Cargobull and the aerodynamic design specialists at Betterflow. The first of these optimised trucks is now starting operations.

Aerodynamics is a factor which has a massive influence on fuel consumption and thus also on CO2 emissions. In particular, angular edges on the vehicles can prevent air from flowing freely around it. On modern truck combinations, there are various challenges in this respect, such as the gaps between the tractor unit and the trailer. Air flows create negative pressure in these areas which the truck must subsequently overcome. To overcome this resistance alone, 13 litres of fuel per 100km are consumed – that's more than

a third of the available mechanical energy.

For the tractor, Vion opted for the Mercedes-Benz Actros 1848 LS 4x2. Mercedes-Benz claims that the Actros's new MirrorCam system, which replaces optical mirrors with digital cameras, reduce fuel consumption by as much as 1.5%. In addition, concave cab side deflectors help optimise the truck's aerodynamics.

A further highlight which increases the truck's efficiency is an improved predictive powertrain control that detects the course of the road and adapts the vehicle's driving behaviour to this; the OEM claims a benefit of up to 5% on out-of-town roads.

In addition, Vion is co-operating with Aachen, Germany-based start-up Betterflow. The aerodynamics consultants optimised the shape of the trailer and, in 2020, put the vehicle through large-scale field tests covering more than four million kilometres to prove



just how big the fuel savings are in real-world situations. Three components were retrofitted to the semitrailer: underfloor panelling (LowFLOW), a trailer bulkhead front spoiler (HighFLOW) and the central component – the RearFLOW rear wing system, pictured – which automatically opens at a speed of 60kph and closes again when the vehicle is driving slowly.