



Sum of the parts

Methods available to transport and fleet managers for reducing fuel consumption have developed exponentially over the last few years. Thanks to government funding, the DfT's Freight Best Practice campaign brought into focus - through trade shows, guides, case studies and the commercial vehicle media - measures that all operators could adopt to reduce their fuel bills. These still hold good today, and indeed most are just common sense: safe and efficient driving, improving aerodynamics, correct vehicle specification, correct axle alignment, good tyre management and use of advanced lubricants formed the foundation of its guidance.

It was accused at the time by some of 'teaching granny to suck eggs', but there is no doubt that the number of incorrectly gapped tractors and trailers reduced dramatically. Also, sales of low rolling resistance tyres and aero kits increased, and driver training became something that was looked upon positively.

So today, with most operators following best practice, where is the clever money on fuel efficiency? In terms of innovation, the first place to look is the OEMs and their latest truck designs. Euro 6 has pushed engineering boundaries and the results certainly include more fuel-efficient prime movers.

A holistic approach to improving fuel efficiency suggests that adopting a range of innovative solutions makes most sense, writes Peter Shakespeare

GBA Services was among early adopters of Euro 6 trucks. Following positive results from an initial batch of Euro 6 DAF XFs delivered in July 2013, the firm added a further 10 XF 460 FTs to its UK and European time-critical operation. The new trucks were additions and replacements to its fleet, and figures obtained from like-for-like Euro 5 and Euro 6 DAF XFs saw average improvements in fuel economy of 5–8%.

EURO 6 POWER

At the time, GBA managing director David Birkbeck said: "Fuel efficiency from our first Euro 6 DAFs saw an improvement over Euro 5 models and that's been very encouraging." And this story repeats when speaking to all the other manufacturers.

Staying with the prime movers for now, another relatively recent innovation has been predictive cruise control. PCC is a driver aid based on GPS technology. Detailed road map information is used so that the truck transmission 'knows' the

driving conditions it is about to meet. Anticipating impending changes in the gradient, PCC may overrule the cruise control speed, re-optimize gear shifting on automated gearboxes and/or induce eco-roll to save fuel. According to DAF, in normal long-haul applications, fuel savings will be about 1.5%. But on hilly roads, savings up to 4% are possible.

While not an innovation, training and managing drivers to drive as efficiently and safely as possible is another key component of reducing fuel consumption. Several years ago, systems such as VeMIS acted like a big stick, beeping at the driver if he over-revved or made harsh brake applications. Today, the approach has changed, with telematics providing discreet driver behaviour ratings, enabling employers to coach them on how to improve.

One leader in this field is technology firm Microlise. It advises that changing behaviour will lead directly to savings. This does not just apply to the drivers, says the firm, but to the whole business, from directors down. Among keys are setting depot and contract fuel reduction targets - and meeting them. Appointing fuel champions and managers to take ownership of the project and offering rewards then cements in the approach.

It's all about turning fuel efficiency into a corporate strategy, which benefits all. Large family-owned haulage firms

ENABLING TRAFFIC OFFICE TECHNOLOGY

One of the biggest innovations of recent times is the ability of IT systems to integrate data from various sources to optimise vehicle use. The obvious benefits are lower mileages and reduced fuel consumption.

TomTom's Webfleet tool draws on a database of historic journey times and accurate traffic data to help operators improve routing and scheduling. The system also provides accurate ETAs for every journey, allowing users to plan ahead in case of delays and to manage expectations by informing customers early.

TomTom says the key feature is its open APIs (application programming interfaces), which allow easy integration with a wide range of routing and scheduling software. A host of ready-made integrations is already available through the TomTom App Center and - by feeding accurate GPS location, traffic and route data into routing and scheduling platforms - they make it possible for operators to benefit from dynamic planning.

Using data from Webfleet, routing and scheduling software can automatically optimise daily and weekly schedules, helping to minimise time on the road. For example, planning can account for expected congestion to help arrange jobs at times when its impact is reduced.

When delays occur or the traffic situation threatens timely completion of jobs, schedules can be adapted on the fly, helping operators to work around delays while also ensuring that jobs are reallocated to the most appropriate drivers. The automated nature of these processes also remove the need for paper dispatch notes or phone calls, as updates are sent directly to in-vehicle driver terminals with navigation instructions adapted accordingly. It all makes a difference.



reflected in reality? The truth is you don't without a tool to analyse planned versus actual. No matter how well a journey is planned, something might still go wrong with it."

So, what can you do? "There will often be a very good reason for a divergence from the planned route. But, regardless, it's key to engage with drivers and find out what was occurring. It's not uncommon for customers to identify well over 10% of savings once they start using our journey management product, as a result of debriefing drivers when they don't take the optimal route. This activity influences behaviour and improves route conformance," he explains.

PLAN, EXECUTE, MEASURE

His advice: plan, execute and measure. By using this approach, you can continuously improve to deliver better fleet and driver productivity, improve customer service and reduce wasted time, miles and fuel. "Continual positive feedback will lead to a fine-tuned operation getting better over time. Using historical data, you can then take a step back and look at the trends. It's possible to understand if any element of your operation unfolds as it should do and take appropriate action," he concludes.

On an entirely different note, another

like CM Downton have adopted this approach with very positive results.

Indeed, the DfT's 2017 Freight Carbon Review dedicates several pages to the use of telematics and back office systems to help reduce carbon emissions - and, by definition, fuel consumption. Part of this approach involves transport planners. Making sure the transport operation sticks to plan means the effort that goes into planning and optimising routes - and making schedules that remove unnecessary mileage - pays off.

"There is a plethora of sophisticated tools available to help transport operators

reach planning nirvana," comments Microlise director of product Stephen Watson. "We integrate our telematics, journey management and proof of delivery products with many of them. This enables our customers to export their perfected itineraries straight to the truck cab ready for drivers to follow them out on the roads."

He agrees that having these plans in place helps operators to save money by reducing fuel consumption and improving drive efficiency, but adds that they're not enough. "How do you know your investment in the plan is being



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Stephen Watson

great place to look for innovation is Oxford University. Fuel-saving additives have been around for years and their association with ‘snake oil’ has been around for the same length of time. But around 12 years ago, a group of Oxford professors came up with an additive that was adopted by one of the world’s biggest public transport operators across its bus and coach fleet, initially here and now in the USA.

Energetics Europe was born out of research carried out into nanotechnology. Nano particles in the additive act as a catalyst to optimise combustion of the fuel, says the firm. It has been supplying its Envirox product to Stagecoach UK Bus since 2005 and the bus operator uses it nationally and reports saving fuel. More recently Energetics Europe has developed sales in the area of DPF (diesel particulate filter) regeneration.

ADDITIVE ARGUMENT

“We sell Envirox to many of the main manufacturers of DPF cleaner/regenerator fuel additives,” says marketing manager Matt Stammers. “The active ingredient in Envirox also aids the combustion of soot both in the engine and in the exhaust system, making it ideal for improving DPF regeneration.”

Stammers says the fuel saving argument in favour of regularly using Envirox arises by minimising soot loading of the DPF, which means back-pressure in the engine is reduced, which in turn improves miles per gallon. Also, the need for active regeneration – which comes with a fuel penalty – is less frequent. “Our DPF Assist Multi Shot multiple dose dispensing bottle will treat up to 1,000 litres of diesel so represents excellent value for fleets that are captive to slow speed driving conditions, such as van and bus fleets in inner city London.”

Stammers says that, while a few haulage companies have trialled the additive, there has only been a small uptake. Why? He believes that, unlike

Stagecoach – which religiously monitors fuel consumption of individual vehicles – hauliers tend not to have this level of information. Nor do they have the stamina to see whether there have been improvements. In his experience, it’s about different operating circumstances and lack of controls. But in the end, you cannot manage what you don’t measure.

Ultimately, using the latest technology and targeted management controls is the best way to win on fuel efficiency. The greatest successes are found among operators that take a holistic approach to tackling the issue. They measure and analyse, and combine the technologies and systems available, rather than clutching at one straw or another.

Viewed this way, significant fuel savings are possible. And this approach underpins the EU’s vision of how CO₂ emissions from commercial vehicles will be reduced in the future – and is reflected in the DfT’s latest Freight Carbon Review.

Of course, this requires operators to make up-front investments in systems, people and equipment, not just one technology or another. And for many, that requires cultural change. But with the price of diesel at around £1.00 per litre, knocking 10% off the annual fuel bill means that even a small operator may see a healthy ROI in months, not years. **TE**



REDUCING FUEL CONSUMPTION: STRATEGY

- Don’t forget the basics. Follow best practice guidance
- Indisputable fact - telematics plays a key part
- Integrate systems so the data links up to provide the full picture
- Operate Euro 6 vehicles. All the evidence points to reduced fuel bills
- It’s not just about vehicle fuel. Consider MHE, refrigeration, trailers, etc
- Remember routing and scheduling
- Specify the right vehicles for the routes and jobs
- Vehicle utilisation and congestion avoidance play their part
- Eco-driving is a key challenge
- Load share between companies reduces empty mileage
- Buy-in from boardroom to driver is essential

