

# Change agents

Allison Transmission's recent Fuel Efficiency Forum, held at Millbrook Proving Ground, gave operators the chance to learn more about technologies and methodologies designed to help cut operating costs, using a spread of approaches. John Challen reports

As if delegates needed reminding, Iveco product director Martin Flach kicked off proceedings at September's Fuel Efficiency Forum, hosted by Allison Transmission at the Millbrook Proving Ground, by informing them that fuel accounts for more than one third of their total operating costs.

Sticking squarely with the technologies that Iveco and other truck OEMs can provide now to help transport operators stay in the black, he highlighted the importance of good aerodynamics, stressing the need for tractor units and trailers to be carefully matched to minimise the drag coefficient of the combination. Reducing the gap between truck and trailer by 50cm could, he assured delegates, save in the region of £1,600 a year in fuel costs for a truck averaging 100,000 miles a year. Trailer side panels, too, could play an important part, reducing drag by as much as 4% – the equivalent of another £1,000 a year.

Flach also stressed the importance of unseen aero work – namely, under the chassis where, he explained, commercial vehicles can learn from the world of motorsport. Vehicles with smooth, flat under-bodies, he said, further reduce drag and improve fuel efficiency.

Meanwhile, beyond technological solutions, he also advocated driver training initiatives. His only caveat – beware of tracking and telematics systems, such as those unveiled at the CV Show earlier this year. Yes, he agreed, they have a major part to play, but, if the serious improvements that can be achieved are to be sustainable, then extra assistance, in terms of driver support behind the wheel, is also vital.

## Transmission talk

Running shortly after the IAA show in Hannover, the forum offered an excellent opportunity for Allison Transmission to reveal the difference its latest products can make for operators wanting to save money. Allison marketing manager Manlio Alvaro explained, for example, how the company's new TC10 automatic transmission could reduce fuel consumption and maximise drivetrain efficiency, through the adoption of several new technologies.

Its gearbox innovations include twin countershafts and a two-speed planetary range output section, which allows higher average speeds – as well as close ratio steps between the 10 forward gears, for greater fuel economy. An added benefit of the TC10, added Alvaro, is the inclusion of helical gears, for



Thomas Hadulla



Martin Flach



Manlio Alvaro

quieter operation. Alvaro also described in detail the transmissions specialist's fifth generation electronic controls, scheduled for official launch early in 2013.

Among the advantages of the latest version are higher-speed CANbus interaction, improved responsiveness and better flexibility – allowing gear shifts to be accurately optimised for best efficiency and productivity. Transmission control module hardware and software have also been upgraded.

## Faster fuel savings

Moving on, Thomas Hadulla, director of engine air management at commercial vehicle systems specialist Knorr-Bremse, was keen to promote the benefits of his company's pneumatic booster system (PBS). This, he said, eliminates turbo lag and also helps to reduce fuel usage.

Hadulla nodded to efforts elsewhere aimed at overcoming lag – such as two-stage turbochargers, smaller compressors and electrical turbochargers – but insisted they all have drawbacks. What Knorr-Bremse is proposing instead is the injection of compressed air directly into the intake manifold.

In contrast to a conventional heavy-duty diesel engine, which takes three to four seconds to produce maximum torque after depressing the accelerator, with PBS air injection ensures instant response. As a result, gear shift points can be lowered, he said, so again reducing fuel consumption, in this case by up to 5%, while emissions also fall, by 6%.

Hadulla explained that a bus equipped with the technology can reach velocity of 1.7m/sec on a 10° slope, compared with 0.7m/sec for a standard vehicle. He believes that this system could, in the future, lead to many OEMs further downsizing engines. Initially designed for the bus market, where the first applications will appear next year, he says that PBS in trucks will follow soon. 