

Simulator training for fuel efficiency

Fuel has long been a critical swing item in the operating cost of any fleet. In response to the escalating price of fuel and our growing environmental obligations, there has been growth in the development of techniques to reduce consumption and emissions, including the introduction of a growing number of alternative powertrains. The truth is however that the manner in which a vehicle is driven has a huge influence over the efficiency that can be achieved. This can be illustrated with an example. I am aware of a small fleet that shifted from the standard version of a mid-range diesel-engined hatchback to the 'eco' model with the same engine size. A short time after introducing this vehicle, it was clear that the manufacturer's claimed efficiency improvement was not being achieved. In fact, fuel consumption had worsened. In trying to achieve a subjectively acceptable level of performance from their vehicle, drivers wiped out the efficiency benefit of the engine technology. Training to ensure that drivers operate their vehicle in a manner that optimises the often competing demands of performance and efficiency, whilst maintaining the highest the standards of safety, is therefore paramount.

There are options for delivery of this training. On-road training in the relevant vehicle has obvious appeal since a driver can be given direct instruction in how to manage the vehicle. However, this has a number of drawbacks. Training and assessment can only be delivered to one driver at a time; a potentially operational vehicle may be tied up in the training delivery and the training itself will lead to fuel consumption and the associated emissions. Alternatively, e-learning – the computer-based delivery of tasks, information and tests – has expanded massively in the last five years and is frequently used for a variety of educational purposes. It is relatively low cost and can be delivered to large numbers of users easily without using a vehicle. However, I would question whether this mechanism has the necessary impact to alter (perhaps deeply engrained) driving habits to effect behavioural change to a wider audience.

The optimal solution would provide a driver with a realistic environment in which to learn advanced driving techniques without utilising a real vehicle and in which more than one driver could be trained in each session. Driving simulators come closest to offering this solution. The UK's Transport Research Laboratory (TRL) has been using driving simulators for more than twenty years now and can be considered authorities in the field.

Back in 2003, when a litre of diesel would set you back less than 80p, the European Union unveiled directive 2003/59/EC. This specified that drivers engaged in the carriage of passengers (from September 2008) or goods (from September 2009) by road must hold a certificate of professional competence. This led to the legislation gaining its more common title of 'Driver CPC'. The aim of the directive is to improve driving standards and to encourage recruitment into the profession by demonstrating its modernisation.

Within the Driver CPC legislation, a key phrase opened the possibility to train commercial drivers in a novel manner. A proportion of the training could be provided on a 'top of the range simulator'. Consequently, in 2002, TRL were commissioned by the UK Department for Transport to ascertain the view from within the haulage industry as to what the features would be required in an effective training simulator. The review highlighted that drivers were keen to use simulators of the highest possible fidelity – recreating driving as accurately as could be achieved. Consequently, TRL were tasked with specifying, procuring and operating the UK's first high fidelity truck simulator, which

went live in 2003. Subsequently, more than 1,200 professional drivers have used the simulator and TRL's research has proved that drivers trained in the simulator achieve real world fuel savings of more than 15%.

The marketplace for simulator training is now getting more crowded as more companies seek to take advantage of the benefits that can be attained. Indeed, in the trucking community, simulation may be instrumental in providing additional capacity for delivering the compulsory certificate of professional competence (CPC) training. Balfour Beatty in Derby recently added to their car simulator, acquiring two high quality truck simulators (made by Thales) for driver training; similarly TIR in Beverly have had success offering their CPC-certified simulator training on their systems (made by L-3). Systems Training have also recently acquired two truck simulators (made by ECA-Faros) for driver training. This pattern is steadily bringing the UK into line with practices in continental Europe where simulator training is far more common. It will be interesting to observe how these different simulator systems, offering different levels of fidelity of simulation, are regarded by trainees and the industry.

In addition to improving my own driving style, my experience in the use of driving simulators has taught me one key principle. Simulators can provide a very realistic driving experience and the capability to offer rich training scenarios in complete safety. However, when considering driver training, a simulator must not be considered as the solution in itself; one should not arbitrarily decide that simulators are the panacea and rush headlong either into the purchase of such systems or committing to a simulator training programme. Whilst there are simulator suppliers and training providers that will be more than happy to take your money, this approach will not deliver the maximum benefit. It must be understood that a driving simulator is a tool that can help to achieve specific training objectives. The secret therefore is to have a very clear understanding of the training objectives that you wish to achieve and to seek guidance as to how simulation may be used to address it. Do that and the virtual world becomes your oyster.