

The reality thing

It has been 13 years since Transport Research Laboratory evaluated the use of a truck simulator for training drivers in safe and fuel-efficient driving. Kevin Swallow assesses how well this great leap has worked out

Seven years ago I travelled to TIR Training in East Yorkshire to try a truck driving simulator used for training. I watched three lorry drivers from a local logistics company go through the third and final part of the training process before their performances were assessed by a qualified instructor.

The brief was to get drivers to maintain their usual road speed but use less fuel. Each had gone through an acclimatising process to come to terms with motion sickness brought on by the seats' lateral movement used to imitate the road. Then it was on to hazard perception/anticipation challenges before concentrating on fuel-efficiency techniques. All three drivers achieved their targets.

TIR Training sold the concept as a chance to put the driver into situations where reaction and decision-making is paramount without having to spend endless hours driving in between the incidents, and without causing damage. With little time left in the day, my go

embodied the phrase 'crash course'. Snow and ice was followed by high winds, torrential rain, pea-soup fog, a child running into the road, a drunk driver and a blowout.

My efforts at TIR Training came years after the 2004 launch of Transport Research Laboratory (TRL)'s own simulator.

The initial signs suggested the road haulage industry was willing to engage. TRL introduced its 'Trucksim' fitted within a Mercedes-Benz cab to put truck drivers through their paces. It was followed by Scotsim in another cab provided by Renault Trucks for drivers north of the border. With an initial flurry of willing participants from an array of hauliers, it seemed like the £1.6 million provided for driver training by the Department for Transport's Road Haulage Modernisation Fund to pay for drivers was money well spent.

One TRL employee who remembers it well is the academy director Nick

Reed. When he joined TRL in 2004, he was involved in the simulator project. He recalls:

"Research found that continuous driving worked better than just manoeuvring and that it improved fuel efficiency. We used the spirit of SAFed (The Safety Assessment Federation) where the driver [initially] drives without any advice, is then given instruction and drives a second time to improve their performance. It was all very successful," he says.

Once government funding ended, TRL went to market and ran Trucksim until 2010, with Scotsim running concurrently between 2006 and 2008. In all, more than 1,800 people received training, with many achieving a 15% increase in fuel efficiency without dropping their speed.

"Allied Bakeries was one operator that used it for training and the simulator





produced really good results. For the money that was spent on it, Allied Bakeries saw a return on investment in three months with the money saved on fuel efficiency," adds Reed.

MIXED REACTIONS

Reaction from the wider road transport fraternity was mixed. Between 2003 and 2005 Jim Thomson was a senior instructor at SAFed. "What TRL's simulator was designed for - safety and fuel efficiency - the software wasn't good enough, and SAFed didn't consider taking it on," he recalls. "The technology also wasn't responsive enough to replicate real-life issues."

Thomson felt improvement in fuel economy was better achieved in practical one-to-one training in a vehicle. He says: "Training schools could not afford it and transport companies could not afford to travel to and spend time in a classroom and have their trucks sat idle.

"It was the right idea, but it needed to replicate actual driving as regards hazard perception, and not be displayed

on a two-dimensional screen." With the available technology of the day, "it couldn't be a substitute for a practical lesson in a truck," he concludes.

Several HGV training companies that wished to remain anonymous echoed Thomson's words about cost, both in terms of purchasing and charging wannabe lorry drivers to train on it.

One company that did invest in the concept is Carlisle-based SP Training, which bought two truck driving simulators, costing £120,000, in 2011. SP Training used the simulator to deliver driver CPC and SAFed training to improve fuel economy and cut emissions for local Cumbrian hauliers, stating that the simulator helps drivers better prepare for their test and allows companies to maintain pass rates.

But, even though truck manufacturers received access to the demonstration 'vehicle', none of them took up simulators as a training tool. John Griffiths trialled the original Trucksim in 2004; he is the driver trainer for MAN Truck & Bus UK. He remembers: "I got terrible motion sickness. It was not a replacement for driver training with established drivers, although for provisional drivers it was a way of introducing them to the industry for safety purposes."

But Reed at TRL states that only 5% of those who took the training suffered motion sickness at TRL. That said, he adds: "It's not good when a driver suffers and cannot complete the course; it's not their fault, but they spread the word and simulation gets a bad reputation because of it."

There were other issues, too. Says Reed: "Being based in Berkshire was a problem; TRL would have attracted more transport businesses if it was based in the Midlands. Although simulator training is included in the driver CPC, it is more expensive than classroom-based training. Simulation is a challenging market; costs, access

SIMULATION FOR VEHICLE MANUFACTURERS

An area where simulators play a significant role is engineering. American-based Mechanical Simulation Corporation develops and distributes **TruckSim** (no relation to TRL's simulator of the same name) to global OEM and Tier 1 suppliers as an engineering grade software tool that simulates the dynamic behaviour of heavy trucks, explains president Terence Rhoades.

He says: "There are also heavy-truck simulators (we) manufactured that tend to be used by OEMs and government agencies as engineering tools used to develop advanced vehicle features or to simulate and study accidents."

Ansible Motion, based in Norfolk, provides driving simulator solutions for specialty transportation constructors and suppliers. Technical liaison Phil Morse says it delivers simulators to OEMs for vehicle development and at the moment one of the critical areas is developing driverless technology.

He says: "All the technology associated with driverless vehicles is being tested; I think it will be the commercial space that sees driverless technology arrive first as the cost savings are there. I think the lag will come in the infrastructure needed to accommodate it, driver training to cope with a driverless vehicle (when to re-engage being a vital issue) and insurance and legal requirements - there are many entities to overcome."

Another example of the importance of simulation for carmakers: last month Renault acquired a 35% stake of a new joint venture, **Autonomous Vehicle Simulation**, formed together with French simulation firm Oktal, for virtual testing of autonomous vehicles.



Euro Truck Simulator 2 garage summary screen



ETS2 players can get behind the wheel of a variety of trucks, and drive them across Europe

to training, time and sim-sickness or motion sickness are all issues. Our focus on simulator training shifted in 2010."

TRL moved on to a project to improve drivers' response times to road signs, involving three flat screens inside a cab environment, focusing on English and non-English speaking drivers. That ended in 2013.

Now, TRL is into virtual reality. Reed explains: "This looks at a number of things: visibility, urban environments, cabs where visibility is challenging, blind spots and awareness, and cab design." Although TRL is tight-lipped about system specifications in advance of launch - it hopes to go live in the next six months - it will include VR goggles and an integrated steering wheel.

Reed still believes that simulation-based training for truck drivers has huge potential. He concludes: "Simulation works in other sectors and can be successful in transport."

ANOTHER APPROACH

Jonathan Bell is the CEO and founder of Berkshire-based Motion Simulation. He says the transport industry needs to understand the true value of using simulators for training - as regards costs and benefits - rather than purchase it as a flagship 'look at me' investment that actually delivers very little benefit.

After five years of research and development, Bell launched the TL1 racing simulator in 2008. He was then approached by Babcock International,

which delivers specialist training, to help design and build a simulator to train drivers in the emergency services sector. In early 2016, and following an extensive period of research and development, Babcock launched its blue light driver simulator (shown, p22), and exhibited it at the CV Show last year. This combined technology and trainers, certified by RoSPA (The Royal

Society for the Prevention of Accidents).

The software replicates the experience of driving a real fire engine, and can also be adapted to simulate any emergency response vehicle.

The 200° wrap-around spherical monitor features a six-million-pixel screen, fully-adjustable cockpit, and a moving platform underneath the driver that provides three-axis motion to replicate the heave, pitch and roll of a moving vehicle. Audio headsets allow the trainer to coach in real time.

Perhaps more importantly, clients do not need to travel to the Slough trading estate where the company is based; instead the simulator can be moved.

Alistair Cumming, head of training, design and development at Babcock Skills & Learning, says: "Babcock will work with blue light drivers to ensure they are confident, compliant and competent to drive these vehicles safely at speed. They'll be training in a safe and hazard-free environment."

While the truck driver simulator training concept has not taken root as TRL might have hoped following initial reports in 2004 that drivers had 'a high level of acceptance for the simulator and simulator training package', it has not been completely lost. Several training businesses I spoke with had access to, or were planning to buy, a simulator, but felt they were not ready to go on the record just yet. One thing that's clear is that training providers need regular footfall to justify the investment. **TE**

EURO TRUCK SIMULATOR 2

Long-established in the world of gaming is Euro Truck Simulator 2 (shown above, on pp22-23 and on the cover). Players can set up their own company, take on work as a driver, get their first truck and go - all without leaving the comfort of your computer. As 'Dave Transport', I spent several weeks as a driver before buying a DAF XF105. Based in Plymouth, I set out for Cardiff, Southampton and then Rome, Italy.

While the experience is better when using a steering wheel - rather than the keyboard buttons that I used for controlling direction, acceleration or braking, with the mouse for lateral vision - that disadvantage didn't diminish my enjoyment enough to stop playing. The visuals were strong, although a two-dimensional view of the world can lead to overshooting junctions, or excessive braking.

The software (€20) is ideal to introduce someone to the world of trucking, as it covers everything a truck driver would have to cope with, except sleeping roadside and being deprived of basic facilities. **-KS**