

Modern Methods for Measuring and Training Driver Risk

Why predictive, evidence-based tools are the future of
fleet safety



Research-led solutions for safer driving



Understanding modern driver assessment

Driver risk management has evolved rapidly over the last decade. While traditional methods such as licence checks, on-road assessments, and telematics remain essential, they tend to focus on what has already happened — identifying issues only after a risky event or collision has occurred.

Modern approaches aim to go further. By assessing how drivers think, perceive hazards, and make decisions in real time, fleets can now predict and prevent risk before it manifests on the road.

These predictive tools, supported by behavioural science and validated research, are transforming how organisations understand driver competence. They help managers take a proactive stance — not simply recording past mistakes, but identifying potential problems early and guiding effective, targeted training.

What about training?

Driver training is mandatory for certain vehicles. For example, drivers of lorries over 3.5 tonnes or passenger-carrying vehicles with 9 or more seats must complete their initial Driver Certificate of Professional Competence (CPC) and then complete 35 hours of training every five years to retain their CPC card.

This should be seen as a minimum training requirement, not a target. There is still a legal obligation to ensure that drivers of smaller vehicles are safe on the road as well, and while there is no minimum training requirement, many companies provide training for all drivers as a demonstration of their legal and ethical commitment towards road safety.

What training is out there?

A range of training methods is available to fleet managers including educational workshops, e-learning, on-road instruction, and advanced or specific-vehicle courses.

Regardless of the format, it is the frequency and relevance of training that are most important.

On-road training is the most realistic form of driver development, but it can be the most logistically challenging, especially when a small number of driver trainers are tasked with assessing a large number of drivers over extended periods.



Good old-fashioned on-road training!

On-road training gives drivers the opportunity to practise practical driving skills in situ, with instructor assessment and guidance.

The downside is that you cannot ensure all trainees have the same experience — for instance, weather conditions and traffic density will change across sessions.



Furthermore, you can't place trainees in the kinds of extreme situations that might appear in the DVSA's hazard-perception test. Researchers have reported that it takes approximately 90 minutes of driving, on average, to encounter one hazard worthy of inclusion in such a test.

To expose trainees to the same number of hazards as appear in the DVSA test — regardless of the ethical implications — would require about 22.5 hours of driving (plus mandatory breaks)!

Can driving simulators help train drivers?



People who promote driving simulators often compare them to pilot training. Advanced flight simulators let trainers safely recreate extreme situations.

In the same way, driving simulators allow assessors to expose drivers to realistic, hazardous scenarios and make consistent comparisons across a group.

However, simulators can be expensive — often costing tens or even hundreds of thousands of pounds. And even when organisations can afford the hardware, software, and space, there's still a limitation: no matter how advanced a simulator is, only one person can use it at a time.

How else can we assess drivers in dangerous situations?

Fortunately, there are alternative methods for presenting dangerous driving scenarios safely without the need for expensive simulators.

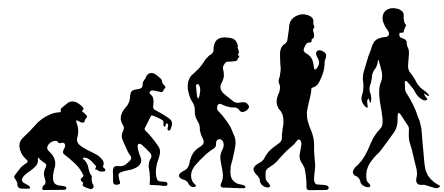
Driver risk-taking propensities and hazard-awareness skills can be assessed and trained using video-based scenarios, requiring drivers to make decisions from clips filmed from the driver's perspective.

The DVSA's hazard-perception test is perhaps the best-known example of this approach.

The evolution of driver assessment

Traditional measures tell us what happened; behavioural science tells us why it happened.

By using validated, video-based tools and cognitive measures, including hazard perception, hazard prediction, and decision-making tests, fleets can now assess the mental processes that underpin safe driving.



This shift from observation to prediction represents the future of driver competence management.

Looking ahead

Modern, evidence-based tools now enable fleets to assess driver competence and risk proactively — identifying issues before they occur and training drivers through realistic, video-based methods.

While traditional approaches such as on-road training and telematics remain valuable, the future of fleet safety lies in understanding how drivers think, perceive hazards, and make decisions in real time.

In our next guide, we explore this next frontier — the science of hazard perception — and how Esitu Solutions is adapting this proven method for professional drivers.

Next Step

Make your telematics data actionable. Use the [Fleet Safety Readiness Checklist](#) to integrate data with driver competence management.

