



Direct vision

Working towards the Direct Vision Standard
for London's heavy goods vehicles

Introduction

Heavy goods vehicles (HGVs) make up less than four per cent of the miles driven in London, but were involved in around 78 per cent of cyclist fatalities and 20 per cent of pedestrian fatalities in 2015.

One of the most common contributory factors identified in HGV collision police reports was vehicle 'blind spots', where the driver cannot see other road users close to their vehicle. Off-road HGVs, typically used in construction, have greater blind spots and are involved in far more cyclist collisions overall than a typical on-road model, such as those used for supermarket deliveries.

In trying to understand the nature of HGV collisions, we have worked with the construction industry in establishing the Construction Logistics and Cyclist Safety (CLOCS) programme. CLOCS has raised awareness of steps the construction industry can take to minimise risks to vulnerable road users, and has identified vehicle design as a key area of focus.

We commissioned Loughborough University to conduct research to assess the blind spots of around 19 different types of HGVs. For the first time, the research found clear links between the height of lorry cabs and the position and size of windows, and how much the driver can see. It recommended developing standards to make this information available to help operators select the safest and most appropriate HGV for their business. These findings are the basis for the new Direct Vision Standard.

To complement this, the study also identified a need to create new standards to assess and grade ground conditions at worksites in order to reduce the need for off-road vehicles. Off-road vehicles have much poorer direct vision performance due to their high cabs and other design features. Well-designed construction and waste treatment sites reduce the need to use off-road HGVs, with resulting safety benefits.

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What is the Direct Vision Standard?

Direct vision

Direct vision is what the driver can see through windows rather than using mirrors or cameras.

Indirect vision

Indirect vision is what the driver can see through mirrors and cameras.

All HGV cabs have blind spots which can obscure cyclists, motorcyclists and pedestrians, but the Loughborough University research revealed significant variations in the size of blind spots between different HGV models.

Of those assessed, blind spots were found to extend up to 2.5 metres on the nearside kerb and up to 1.4 metres at the front of the vehicle. The largest blind spots were to be found on off-road HGVs which have lorry cabs on average 32 per cent higher than other on-road models.

To date, there has been no standard for measuring direct vision from HGVs.

We commissioned Transport Research Laboratory (TRL) to define the world's first Direct Vision Standard.

The Standard is an assessment tool that measures how much HGV drivers can see from their cab in relation to other road users. By analysing collision data to show the areas of greatest risk for pedestrians and cyclists, vehicles can be rated based on the size of high-risk blind spot areas.

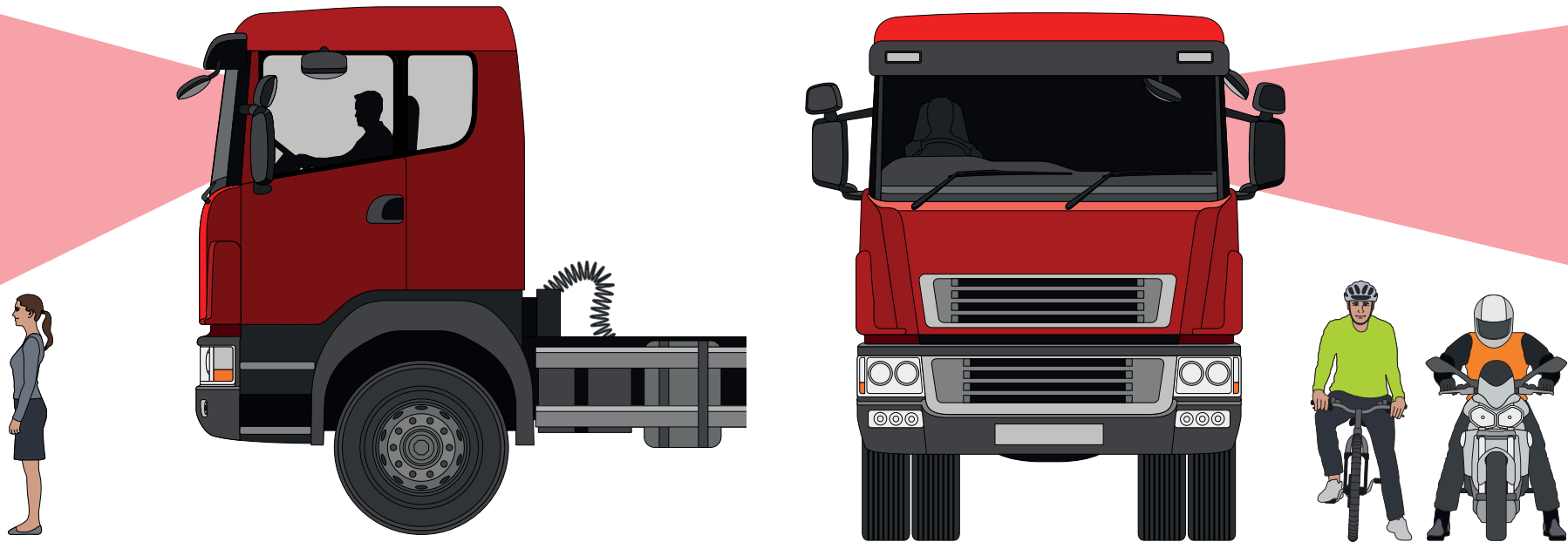
HGVs will be categorised using a star rating system, ranging from no stars for vehicles with the lowest direct vision, three stars for vehicles with good levels of direct vision to five stars for the highest (see page 8).

Reducing HGV blind spots is essential to minimising the risk of collisions. The Direct Vision Standard assessment and rating will lead to greater awareness of the direct vision an HGV driver has, and will inform operators who are buying HGVs. There is also the potential for it to help specify standards for the types of lorry that can be used in certain circumstances or locations.

Limited direct vision model

Pedestrians are around three times more likely to be in the blind spot of an off-road HGV than an on-road model.

A cyclist on the kerbside of an off-road vehicle is more than twice as likely to be in a blind spot than if they were on the same side of an on-road model.



Limited direct vision

Design features

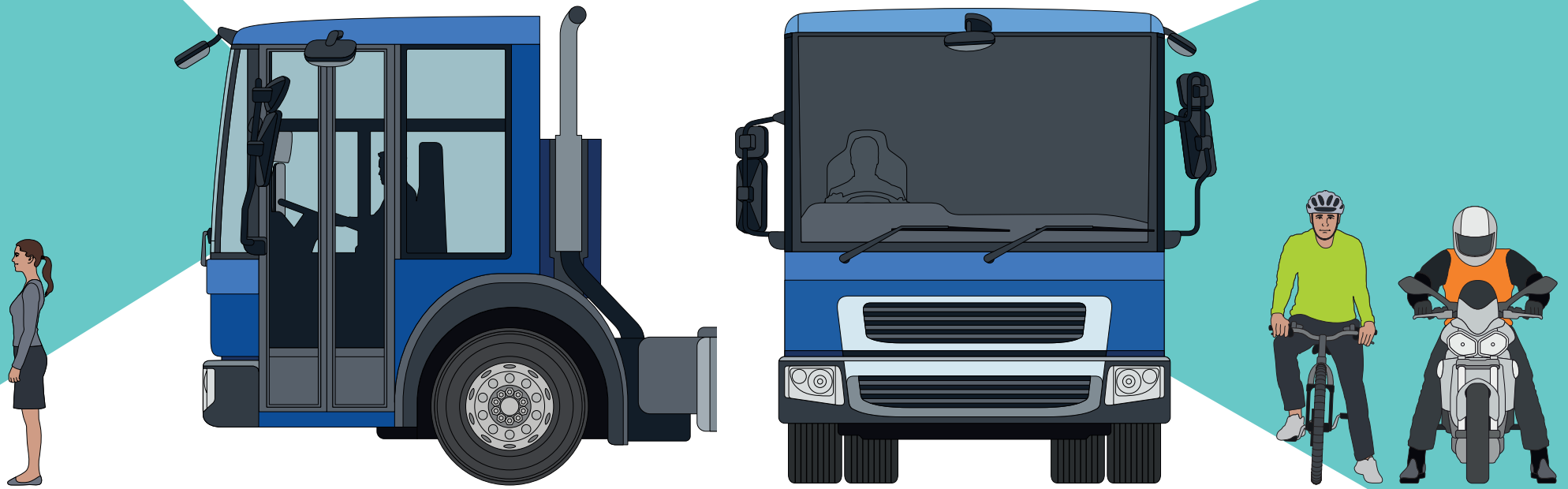
Higher windscreens and passenger windows have limited views (A). Mirrors (B) and cameras can help reduce blind spots, but they can distract the driver and distort images.

It takes time to check and take in information using mirrors and cameras and by the time all checks are completed the situation on the road around the lorry may have changed.



Best in class direct vision model

The benefits of direct vision are obvious – other road users can be seen more clearly, are full size, and direct eye contact can be made.



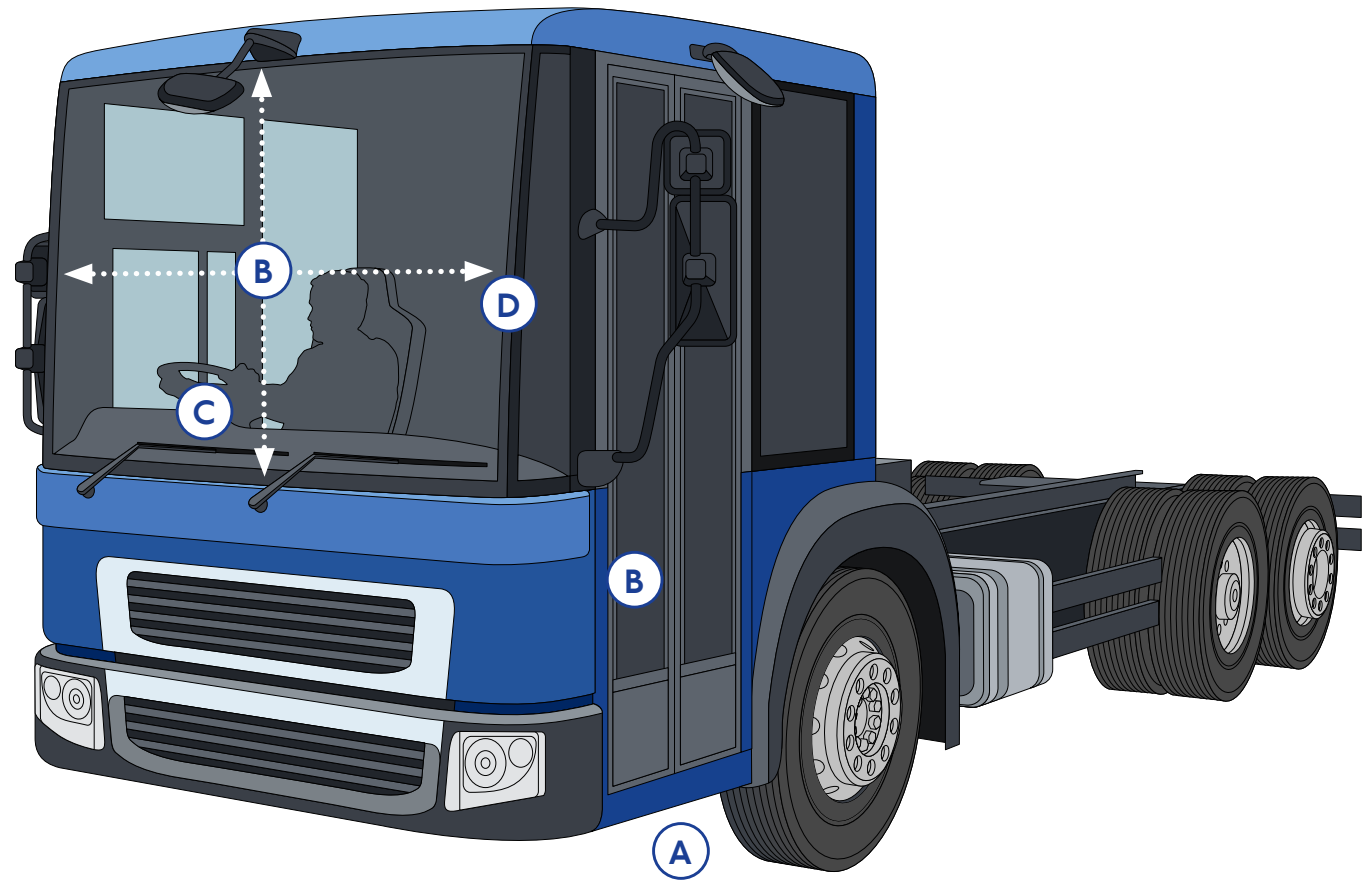
Best in class direct vision

Design features

The combination of a lower cab (A), larger windows and glass doors (B), a redesigned dashboard (C) and support pillars (D) can all play a role in increasing direct vision.

A single change in isolation is much less effective.

A low entry cab with a lower dashboard means more of the road and other road users can be seen by the driver.



Rating standard

A progressive Direct Vision Standard will be used to rate the amount the driver can see



Next steps

A comprehensive safer trucks action plan using the Direct Vision Standard will launch in spring 2017.

Improving Londoner's lives

- The Mayor has asked TfL to consult on how the Direct Vision Standard might be used to remove the most unsafe HGVs from London's roads by 2020 and drive up the safety of the remaining vehicles by 2024
- We will use this Direct Vision Standard in our own supply chains with the Northern line extension and Silvertown Tunnel projects
- We will work with both the public and private sectors so they can follow our lead and boost the number of safer lorries on London's roads
- We aim to have more than 50 five star rated trucks with the highest level of direct vision on the Capital's roads by the end of March 2017

Technical process

- Site standards to assess and grade worksites to minimise the need for off-road vehicles will be published later this year

Working with vehicle manufacturers, operators and their clients

- Collaboration with the logistics industry has been, and continues to be, a vital ingredient for the success of the safer trucks programme
- We will continue to work with vehicle manufacturers and will invite them to have their HGVs modelled and rated against the Direct Vision Standard

Find out more

If you would like more information, go to tfl.gov.uk/direct-vision-standard