

Get compliant for  
**DIRECT VISION 2024**  
**PROGRESSIVE SAFE**  
**SYSTEM** (PSS)

with  
**GUARDIAN**  
automotive

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# WHAT ARE MY COMPLIANCE OPTIONS?

## FOR VEHICLES UNDER 3 STAR RATED

### SAVE TIME AND MONEY BY RETAINING YOUR EXISTING DVS COMPLIANT PARTS

#### All ready got a vehicle fitted with the old direct vision kit?

Our DVSK4 kit can be used to upgrade any old Direct Vision kit  
Simply fit the new side and front radar detection to your vehicle  
and disconnect the old sidescan kit.

### RADAR UPGRADE KIT

#### DVSK4 KIT INCLUDES:

Moving Off Information System (MOIS) - UNECE Regulation 159

Blind Spot Information System (BSIS) - UNECE Regulation 151

A3 Size 'Blind Spot' Safety Sign



If no Direct Vision kit currently fitted (no side camera or left turn alarm)

### FULL RADAR SYSTEM

#### DVSK3 KIT INCLUDES:

Moving Off Information System (MOIS) - UNECE Regulation 159

Blind Spot Information System (BSIS) - UNECE Regulation 151

HD Side Mounted Camera

HD 7" Quad Monitor

- 4 camera inputs for future additions as required.  
- Single, split, triple or quad viewing options.

GPS Multi-Function Alarm

A3 Size 'Blind Spot' Safety Sign



CAL1 - Calibration kit is required for initial MOIS/BSIS setup

# INTRODUCTION TO DIRECT VISION - PHASE 2 PROGRESSIVE SAFE SYSTEM (PSS)

**HEAVY GOODS VEHICLES (HGVs) REQUIRE A HGV SAFETY PERMIT TO OPERATE IN LONDON, AND THIS BOOKLET EXPLAINS WHAT THAT MEANS FOR YOUR VEHICLE**

This guidance sets out an overview of the HGV Safety Permit Scheme and describes the vehicle requirements for getting a permit. It explains the policies for the Direct Vision Standard (DVS), and how these should be applied in practice.

This replaces the HGV safety permit guidance that was originally published in 2019. This guide reflects new minimum DVS rating that will be required from October 2024, the Progressive Safe System (PSS), and the user enhancements to the scheme.

Further information about operational processes, including the permit application process, is available on the TFL website.

Source: TFL October 2023

## HOW HAS THE DVS AND HGV SAFETY PERMIT SCHEME CHANGED?

Since the DVS was launched in 2019, the minimum DVS star rating for HGVs to operate in London has been one star. Vehicles that were zero star or unrated had to fit additional safety measures, which were known as the Safe System, to operate in London.

From October 2024, these requirements will be enhanced, and the minimum DVS rating required will be three stars. This means that vehicles rated two or below on the DVS star rating scale, including unrated vehicles, will need to fit the new PSS.

The Safe System was first introduced in 2019 to support the DVS. In accordance with TFL's commitment to continually raise safety standards and keep the Safe System progressive, TFL reviewed it in 2022 to identify any additional technology or safety equipment that had evolved since the original launch and could carry improved safety benefits.

## WHAT IS THE PROGRESSIVE SAFE SYSTEM?

The PSS is a set of vehicle safety measures, fitted after or at the point of manufacture, which are designed to reduce the risks that HGVs present to vulnerable road users. To ensure consistency, the PSS is aligned to other scheme requirements, including existing and forthcoming standards such as the European Union and United Nations Economic Commission for Europe (UNECE) regulations where possible.

## HOW DO I MAKE MY VEHICLE COMPLIANT?

Until 27th October 2024, the minimum DVS rating to operate in London is one star; this will increase to three stars from 28th October 2024.

If your vehicle meets the relevant minimum DVS star rating, you will be able to apply for a permit without taking further action to fit additional safety measures. The step-by-step checklist sets out how to make an application.

If your vehicle does not meet the relevant minimum DVS star rating or is not rated, you will need to make your vehicle safer by fitting the PSS by 28th October 2024 before receiving a permit. Details of the PSS are set out by TFL.

# EVIDENCE REQUIRED TO DEMONSTRATE COMPLIANCE WITH THE PSS

For applications regarding vehicles rated zero, one or two stars, or where your vehicle is unrated, you will need to submit the following to Transport for London:

**VISUAL EVIDENCE:** two photographs to demonstrate that the PSS has been fitted to your vehicle

**SENSOR FUNCTIONALITY STATEMENT:** a statement self-certifying that all sensors have been fitted in accordance with their technical specifications and are in functional working order.

Additional information and examples of good photographic evidence can be found at:  
[www.tfl.gov.uk/info-for/deliveries-in-london/](http://www.tfl.gov.uk/info-for/deliveries-in-london/)

## GETTING YOUR HGV SAFETY PERMIT

All HGVs of more than 12 tonnes gross vehicle weight require a safety permit to enter or operate in Greater London, unless exempt.

A safety permit is applicable and enforced throughout Greater London using automatic number plate recognition cameras.

You can apply for a safety permit here:

[www.tfl.gov.uk/modes/driving/dvs-safety-permit-application/](http://www.tfl.gov.uk/modes/driving/dvs-safety-permit-application/)



**Failure to obtain a valid permit prior to entering or operating in Greater London will be liable for a fine of up to £550 and £130 for drivers per infringement**

## STEP-BY-STEP CHECKLIST

1. Enter your vehicle registration number to check your star rating at:  
[www.tfl.gov.uk/modes/driving/dvs-safety-permit-application/](http://www.tfl.gov.uk/modes/driving/dvs-safety-permit-application/)

ABC 123

2. Find out your direct vision star rating.  
If your vehicle is below three stars, please proceed to see step 3.



3. If your vehicle is rated zero, one, two stars or unrated, you must ensure the PSS is fitted. You'll need to provide visual evidence and a sensor functionality statement.



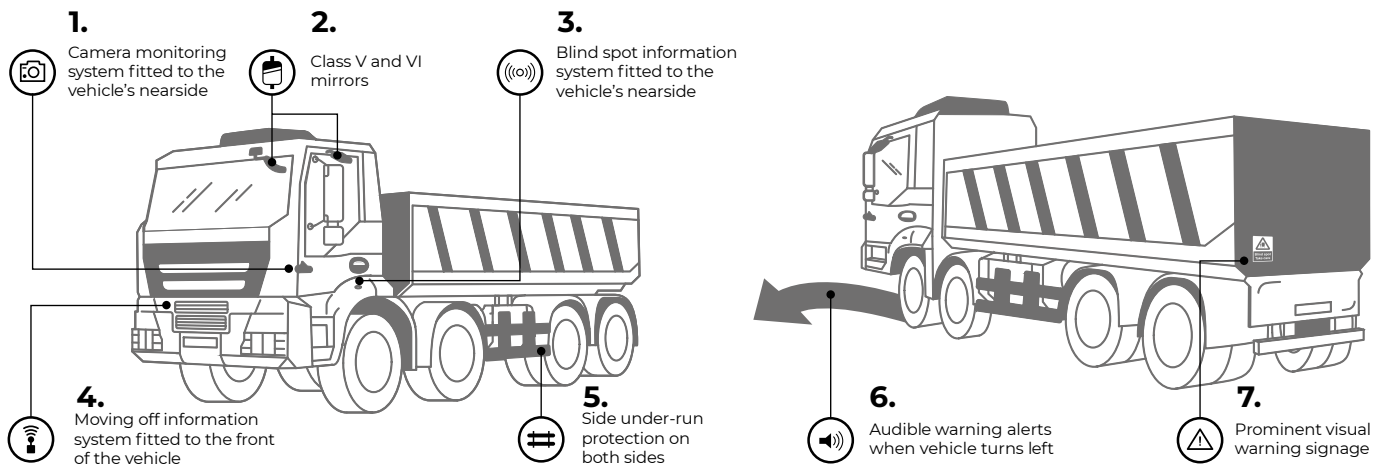
4. If your vehicle is rated three, four or five stars, complete your permit application. No additional fitting is required, you are fully compliant.





# SUMMARY OF PSS REQUIREMENTS

1. A camera monitoring system must be fitted to the nearside of the vehicle, to eliminate all remaining blind spots
2. Class V and VI mirrors, or an equivalent camera monitoring system must be fitted to the front and nearside of the vehicle
3. A blind spot information system (BSIS) with active sensors that gives adequate warning to the driver of the presence of a vulnerable road user, must be fitted to the nearside of the vehicle  
Must comply with UNECE Regulation 151
4. A moving off information system (MOIS) must be fitted to the front of the vehicle to warn the driver of the presence of a vulnerable road user - Must comply with UNECE Regulation 159
5. Side under-run protection must be fitted to both sides of the vehicle, except where this is demonstrably impractical
6. An audible vehicle manoeuvring warning must be fitted to provide an adequate audible warning to vulnerable road users when a vehicle is turning left
7. External pictorial stickers and markings must be displayed on vehicles to provide adequate visual warning to vulnerable road users of the hazards present around the vehicle



## MOVING OFF INFORMATION SYSTEMS

Vehicles must have a front sensor system that activates a proximity information signal to the driver, detecting pedestrians or cyclists entering the critical blind spot area in front of the vehicle when the subject vehicle is stationary with the brakes applied.

This signal must be escalated to a collision warning if the driver begins to prepare the vehicle to move off from a resting position. Front sensor systems must be 'active' and able to react to the presence of vulnerable road users.

They must not provide false alarms. The system must provide a visual signal to show that it has detected a vulnerable road user in the detection area, as specified in the technical specifications.

If the vehicle then moves off with the vulnerable road user detected, then a collision becomes imminent, and an audible and visual alarm signal will sound.

## LEFT-TURN AUDIBLE ALARM

Vehicles must be fitted with audible warning equipment to make nearby pedestrians, cyclists, and other road users aware that the vehicle intends to carry out a turning manoeuvre. The volume of the audible warning, measured at one metre from the alarm, should be between 65 and 88 decibels.

Operators should consider fitting an audible warning system that combines spoken warnings and white noise. It is recommended that audible warning devices require minimal driver intervention. The device should have a manual off switch for use between the hours of 23:30 and 07:00.

For left-hand drive vehicles, the audible vehicle manoeuvring warning must be fitted to warn people walking and cycling when a vehicle is turning right.

## BLIND SPOT INFORMATION SYSTEMS

Blind spot information systems must be fitted to the vehicle to ensure full coverage down the nearside of the vehicle.

Sensors must not activate in response to roadside furniture or stationary vehicles where a collision is imminent.

For articulated vehicles, sensors must be suitably positioned on the tractor unit to provide sufficient coverage of the nearside of the combination but without being activated by the trailer itself.

Sensors must enable detection in the defined zone, and this will extend rearward to areas adjacent to a semi-trailer. This can be achieved in the way that works best for the technology supplier and the vehicle operator.



## WHY ARE SENSORS MORE RELIABLE THAN AI CAMERAS

Cameras can be affected by glare. A frosty camera lens in cold weather could obscure the image. Dirty camera lens, rain, sleet, snow, dust, and salt from the road could affect efficiency. The camera will need constant cleaning.

Cameras need high contrast or illumination to sense well at night.

Cameras will have a delay in processing the image - between the camera picking the VRU up and then turning the monitor on. This is not acceptable for TFL as stated in the technical specification.

Cameras need to be able to alert the Driver of a fault (if the camera has failed) at any moment.

Cameras/sensors must be able to give 2 different warnings to the Driver:

**Visual** - no danger, be cautious

**Audible** - impending collision

When a VRU is detected it will highlight them on the screen and beep continuously until the VRU has left the zone. This could lead to the driver ignoring the noise or turning the monitor off.



## BENEFITS OF USING A RADAR PSS SYSTEM

### MOIS (Moving Off Information System)

Guardian MOIS fully complies with the TFL 2024 (MOIS) Moving off Information System and is calibrated to TFL regulations. These systems have a Time to Collision function = 1.4s alarm warning that is only triggered in the event of an impending collision.

Otherwise, the system silently monitors the area via RADAR up to 2 metres in front and 0.5 metres on either side of the vehicle via the LED display.

This radar module fitted to the front of the vehicle utilizes advanced radar technology to effectively detect pedestrians and cyclists entering the blind spot area in front of the vehicle.

This advanced system is engineered to eliminate false activations caused by street furniture or parked vehicles. This ensures that the system only responds to genuine threats, reducing unnecessary alerts.

When a target is detected within the detection area and the distance to the obstacle is less than 0.5 metres, the system triggers an alarm, displaying an orange colour bar and relevant distance information on the digital display. Additionally, if the Time to Collision (TTC) for a front collision is less than 1.4 seconds and within 0.5 metres, the system activates a collision warning with visual and audible alerts.



### BSIS (Blind Spot Information System)

Guardian BSIS fully complies with TFL 2024 (BSIS) Blind Spot Information System that is calibrated to TFL regulations. This BSIS system is designed to define warning areas and activate warning lights intelligently, or audible warnings when a collision is imminent keeping you informed of nearby vulnerable road users.

One of the key advantages of this system is its exceptional reliability in adverse weather conditions and even when the device is covered in dirt or foreign debris, ensuring consistent performance regardless of environmental challenges.

The microwave sensor effectively identifies vulnerable road users within the vehicle's blind spot, whilst ignoring static street furniture, promoting enhanced driver awareness and safety.





**Contact your Guardian stockist  
for all the compliance kit options and  
expert Direct Vision PSS guidance**

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