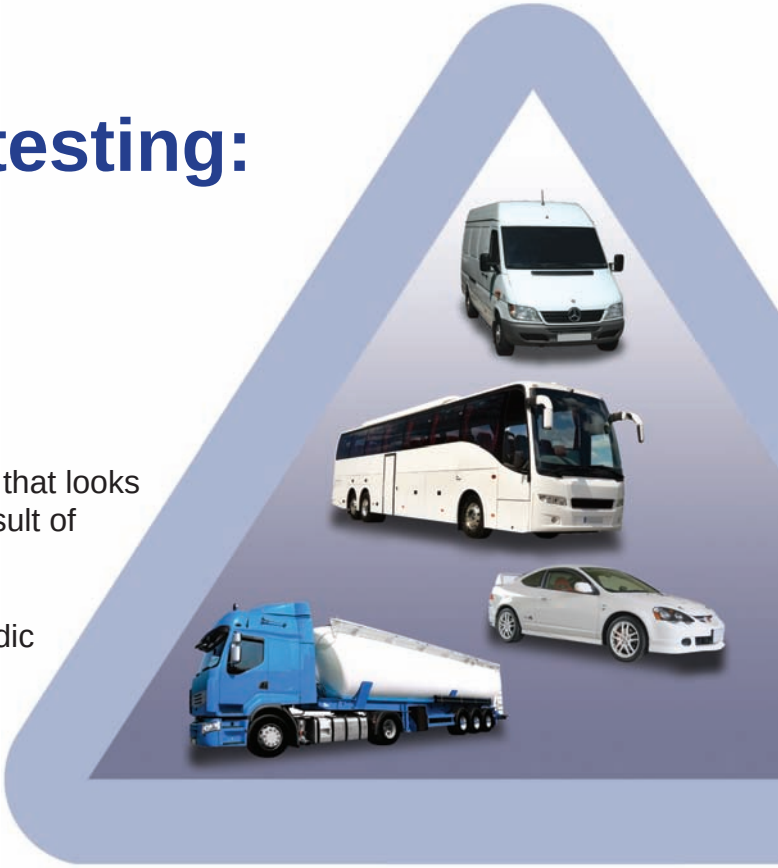
Vehicle & Operator Services Agency

Testing Directive

Changes to vehicle testing:

OTHER ITEMS



Introduction

This is the last in a series of technical pen pictures that looks at the changes VOSA will be implementing as a result of the new Testing Directive.

The minimum requirements for MOT testing (Periodic Technical Inspection in Europe) have long been enshrined in European law, which requires that every EU Member State has an equivalent of our own MOT test for vehicles of a testable age. The legislation applies to trucks, buses, cars and light goods vehicles, but not to category 'L' vehicles which includes motorcycles and quadricycles.

The Framework Directive which covers the technical requirements of the test was recast in 2009 and introduces a number of mandatory new testable items, mainly as a result of the increased number of electronic safety systems fitted to modern vehicles, but also to further harmonise the test across the EU.

The majority of these changes must be implemented by each Member State by 31st December 2011, while changes to brake performance requirements can be delayed until the end of 2013.

To facilitate the required changes, VOSA has been liaising with the Department for Transport and the European Commission to establish the extent of the changes necessary and to implement them with minimal impact in respect of increase in the time to carry out the test, the maximum test fee and the new equipment necessary.

MOT changes to inspection manual

- Section 4 (Tyres)

This final technical pen picture gives an overview of the outstanding MOT test changes in respect of new checks brought about by an amendment to Annex II to Directive 2009/40/EC and introduced by Commission Directive 010/48/EU, specifically, those items not covered under: brakes; steering and suspension; lamps, reflectors and electrical equipment.

These changes will take effect from 1 January 2012.

Section 4.1 – Tyre condition

A bit of an anomaly here as there are no changes to tyre condition. However, tyre pressure monitoring system (TPMS) has been included in this section. These systems have a warning lamp to advise the driver of low pressure in one or more tyres.

However, in the event of a system malfunction, when the ignition is switched on, the warning lamp will generally flash a number of times and then remain on.

The check only applies to vehicles first used on or after 1 January 2012 and is simply that the TPMS warning lamp is working and not indicating a malfunction.

- Section 5 (Seat belts and SRS)

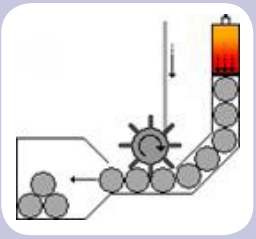
The vast majority of vehicles tested have some form of supplementary restraint system (SRS) fitted. Generally, this will be one or more airbags, but may also include seat belt pretensioners and / or load limiters. These items have been added to the test and are covered in a new sub-section 5.4, which has also led to the renaming of section 5.

Section 5.4 – Supplementary restraint systems

Checks of airbags will apply to all airbags fitted as original equipment, regardless of their location, and a vehicle will fail if any airbag is obviously missing or defective. It may seem obvious, but a passenger airbag that has been switched off is not a reason for rejection (RfR) as this facility is a design feature of the vehicle.

Seat belt pretensioners may be fitted to some seat belts. These are usually a pyrotechnic device that tightens the belt to prevent the occupant from jerking forward in a crash, thereby lessening the possibility of serious injury.

Like airbags, pretensioners are triggered by sensors in the car's body, and most use explosively expanding gas to drive a piston that retracts the belt. In the event of a crash, a pretensioner will tighten the belt almost instantaneously, reducing the forward motion of the occupant. Pretensioners also lower the risk of "submarining", which is when a occupant slides forward under a loosely worn seat belt.



Once a pretensioner has been activated a warning flag may display or the SRS malfunction indicator lamp will illuminate. A pretensioner missing where fitted as original equipment, or one that has obviously deployed will be a reason for rejection.

Seat belt load limiters are fitted to some vehicles and are designed to minimise seat belt-inflicted injury to the rib cage area in particularly violent collisions. This is generally achieved by releasing a little more excess belt webbing when a great deal of force is applied to the belt. Such systems result in an increased likelihood of the seat belt user coming into contact with the steering wheel, so it is imperative that the airbag system is operative to reduce this risk.

The simplest type of load limiter is a fold sewn into the belt webbing. The stitches holding the fold in place are designed to come apart when a high amount of force is applied to the belt, thereby releasing an extra bit of webbing.

Mechanical limiters, such as those using a torsion bar in the retractor mechanism, are far more common, but unfortunately are unlikely to be able to be readily seen or inspected.

A seat belt load limiter missing, where fitted as standard, will result in a failure, as will a 'folded webbing' type load limiter that has obviously deployed.

On vehicles fitted with supplementary restraint systems, the SRS malfunction indicator lamp (MIL) also becomes a testable item. When the ignition is switched on, the lamp, along with a multitude of others will illuminate and then extinguish if no fault is present.

If the MIL is missing, not working or indicating a fault the vehicle will fail. The MIL may display a symbol similar to that shown here, or one depicting a person wearing a seat belt. Alternatively, the letters SRS or another symbol may be displayed.

- Section 6 (Body, structure and general items)

Section 6.1 – Vehicle structure, body and general items

This section has been renamed due to the inclusion of some new test items.

Many testers have often asked why they can fail a vehicle for the wrong font on a registration plate, but not for an engine and gearbox assembly about to fall out. Well the Directive has remedied this anomaly, so now an engine mounting will fail if it is missing or seriously deteriorated resulting in excessive movement.

Engine mounting brackets must also be present and not insecure, fractured or damaged that they are likely to fail.

On front wheel drive vehicles, an engine/gearbox assembly mounting that is bolted to the gearbox is included in these checks.

For Class 5 vehicles, passenger entrance/exit steps and stairs are now included. These must be secure and not in such a condition that they are likely to be a trip hazard or cause injury and this includes any anti-slip provision fitted. A missing stair or a retractable step not operating correctly will also result in a failure.

Section 6.2 – Seats and doors

Again you will notice that the title of this section has changed, but only in that the subjects have been reversed. The section has also been split into four sub-sections to make it more user friendly.

Seats are now covered in sub-section 'A' and there are a couple of additional checks to be made. Firstly, it will be necessary to check that the driver's seat fore and aft adjustment mechanism can be secured in the selected positions. There is no requirement to check all, or even several possible positions, just that the two or three selected secure the seat as intended. On electrically operated mechanisms, simply that the motor moves the seat back and forth will suffice.

For Class 5 vehicles, there is an additional check that any folding 'occasional' or crew seats flip up automatically when the seat is unoccupied.

Sub-section 'B' refers to the inspection of doors and a rear door that cannot be opened from outside the vehicle using the relevant control, becomes a new reason for rejection. This does not alter or remove the option to refuse to test the vehicle if a door cannot be opened, but allows the tester to fail the vehicle if all other items can still be readily inspected.

Doors should also be easy to open and close, so the test will now include an inspection of door hinges, catches and pillars. If any of these components are missing, insecure or deteriorated to the extent that a door cannot be readily opened or closed, the vehicle will fail.

There are also a considerable number of additional checks relevant only to Class 5 vehicles and sub-section 'C' refers to passenger entrance and exit doors. These will be rejected if they are damaged or deteriorated so that their function is impaired or they are likely to cause injury. Additionally, door emergency and remote controls must be checked for operation and any 'door open' warning must be operative.

Emergency exits on Class 5 vehicles are in sub-section 'D' and there are now checks to ensure that 'break glass' hammers are present where required and that emergency exit signs are displayed and legible.

Section 6.6 – Towbars

Moving on to the towbar section, where there is only one addition and this concerns any inappropriate repair or modification to the towbar assembly, such that it is likely to affect the roadworthiness of the vehicle/trailer combination. Remember that inspection of the towbar electrics are covered in Section 1.9.

Section 6.7 – Speedometer

Those of you who test Class 5s will already be familiar with checks on the speedometer. However, these inspections now also apply to vehicles in Classes 3, 4 & 7 first used on or after 1st October 1937.

There is no requirement to drive the vehicle to carry out the assessment, simply to check that a speedo is fitted, complete and not clearly inoperative. The speedo must also be able to be illuminated and the dial glass must be present and not cracked to the extent that it is a safety hazard, the speedo could be misread or there is a possibility that the indicator needle could foul on the crack.

- Section 7 (Exhaust, fuel and emissions)

Here we have another section that has been renamed. This time though, only to provide more clarity of what this section covers.

Section 7.1 – Exhaust system

The major change in this section is that a catalytic converter missing becomes a reason for rejection. This is likely to be a major factor for some vehicles first used before August 1995 that only require a non-cat emissions test, but were originally fitted with a catalyst.

For Class 5s there is also a check that the exhaust tailpipe is not positioned so that fumes are likely to enter the driver's or passenger area.

Section 7.2 – Fuel system

For years many testers have complained that they can fail brake pipes for chafing or damage, but not fuel pipes. Well this is now remedied, but many will rue that corroded fuel pipes remain a pass and advise.

Section 7.4 – Exhaust emissions – compression ignition

The new smoke limit of 1.5m-1, implemented from 1 July 2011, has been documented in the new manual pages. Remember that this limit applies to both turbocharged and naturally aspirated compression ignition engines in vehicles first used on or after 1 July 2008.

Another new aspect is the test procedure for when a dual exhaust system is fitted. It will now be necessary to treat these in the same way as for spark ignition engines, checking the smoke levels from each tailpipe separately, and then divide the total from both pipes by two. A dual exhaust system is defined as having two separate pipes from the engine manifold all the way back to the tailpipes.

There is also new guidance on testing vehicles as presented, where the engine cannot achieve maximum revs due to design features.

Section 8.1 – View to rear

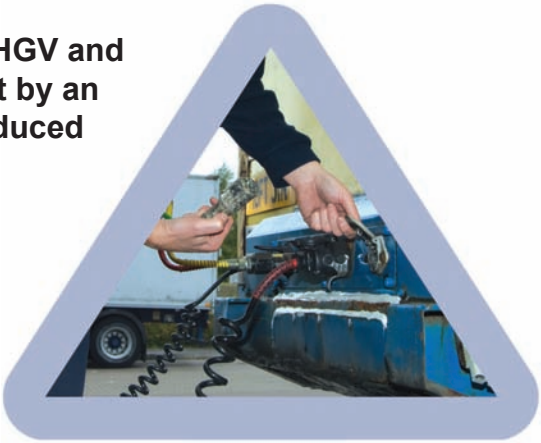
This section was previously known as ‘Mirrors’, but has been renamed as a result of the ever more common use of camera technology, or indirect vision devices.

Nothing else is particularly different, just that the RfRs have been tailored to include indirect vision devices and the obligatory mirror requirements have been put into a table in an effort to make clearer what mirrors are required on what vehicles.

HGV and PSV changes to other items

This final technical pen picture gives an overview of the HGV and PSV test changes in respect of other items brought about by an amendment to Annex II to Directive 2009/40/EC and introduced by Commission Directive 2010/48/EU.

These changes will take effect from 1 January 2012.



IM Section 01 – Registration plates

This is a new section to both the HGV and PSV manuals. The check will only apply to motorised vehicles and checks will be made to make sure the front and rear number plates are present, secure, and legible and match up with the vehicle record documents we see at annual test. Registration plates will need to be easily legible to a person standing 20m from the number plate.

IM Section 03 – Seat belts and supplementary restraint systems

You will notice from the title of this section that we have added ‘supplementary restraint systems’ to this section. The vast majority of large vehicles tested will not be fitted with variations of supplementary restraint systems (SRS). Generally, this will be one or more airbags, but may also include seat belt pre-tensioners and or load limiters. These items have been added to the test and are covered in this section to make sure that if we encounter these devices we can take appropriate action.

Much like in the car MOT scheme, seat belt pretensioners may be fitted to some seat belts. These are a pyrotechnic device that tightens the belt to prevent the occupant from jerking forward in a crash, thereby lessening the possibility of serious injury.

Like airbags, pretensioners are triggered by sensors in the vehicle's body, and most use explosively expanding gas to drive a piston that retracts the belt. In the event of a crash, a pretensioner will tighten the belt almost instantaneously, reducing the forward motion of the occupant. Pretensioners also lower the risk of "submarining", which is when an occupant slides forward under a loosely worn seat belt.

Once a pre-tensioner has been activated a warning flag may display or the SRS malfunction indicator lamp will illuminate. A pretensioner missing where fitted as original equipment, or one that has obviously deployed will be a reason for rejection.

Seat belt load limiters are fitted to some vehicles and are designed to minimise seat belt-inflicted injury to the rib cage area in particularly violent collisions. This is generally achieved by releasing a little more excess belt webbing when a great deal of force is applied to the belt. Such systems result in an increased likelihood of the seat belt user coming into contact with the steering wheel, so it is imperative that the airbag system is operative to reduce this risk. The simplest type of load limiter is a fold sewn into the belt webbing. The stitches holding the fold in place are designed to come apart when a high amount of force is applied to the belt, thereby releasing an extra bit of webbing.

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A seat belt load limiter missing, where fitted as standard, will result in a failure, as will a 'folded webbing' type load limiter that has obviously deployed.

On vehicles fitted with supplementary restraint systems, the SRS malfunction indicator lamp also becomes a testable item. When the ignition is switched on, the lamp, along with a multitude of others will illuminate and then extinguish if no fault is present.

If the MIL is missing, not working or indicating a fault, the vehicle will fail. The MIL may display a symbol similar to that shown here, or one depicting a person wearing a seat belt. Alternatively, the letters SRS or another symbol may be displayed.

IM Section 18 – Seats

We have re-titled this section 'seats' as the front passenger seat now becomes a testable item. Previously, the test only related to the driver's seat and this addition is a significant change.

Our usual strap-line of security, condition and operation applies and we will be checking that the seat is able to move fore and aft where a mechanism allows this. And before you ask no checks on the seat back angle and of course so long as the seat can move to another position forwards and one final movement rearwards, this will suffice. We will not be carrying out further checks of the seat mechanism. On electrically operated mechanisms, simply that the motor moves the seat back and forth will suffice

IM Section 22 – Mirrors and indirect vision devices

Technology marches on and we have to change the title of this section to accommodate new devices that may be fitted to replace traditional mirrors. All else in this section will remain the same.

IM Section 26 – Speedometer/tachograph

One change in this section and many feel this is well overdue. A check will be required to make sure the tyre sizes comply with the calibration plaque. We already check tyre sizes for compatibility and suitability and we check the tachograph calibration plaque details therefore this extension of the test means very little change. The reason for failure will simply be a tyre fitted that does not correlate to the tachograph plaque.

IM Section 42 – Electric wiring and equipment

Again, only one change in this section with the addition of security and condition of trailer electrical sockets. No trailer test tool devices need be used in the HGV and PSV schemes but we will be required to make sure that the electrical connections are secure and not damaged to the extent that a connection could not be made. Checks will need to be visual rather than functional as powered vehicles may not be presented with a trailer.

IM Section 45 – Fuel tanks and system

Liquefied petroleum gas (LPG) vehicles are more likely to be seen on some small PSVs. The availability of a leak detection spray to ensure we can check for gas leaks safely and any failures we encounter will be clearly visible. Remember, the spray can also be used on compressed natural gas (CNG) and liquefied natural gas (LNG) vehicles. Providing the can displays the BS EN14921 (2004) - It is safe to use and non corrosive.

In the event of doubt about the existence of a leak, the spray can be used to confirm its existence.

IM Section 57 – Transmission

The last change that is common to both schemes is the inclusion of transmission dust covers into the test. The Directive simply mandates for a test item in connection with transmission joints. Previous articles have provoked thought about what constitutes a dust cover but it should be considered in the context of the ability to retain a lubricating medium and prevent the ingress of dirt into the lubricant.

List of technical pen pictures

There are a total of four technical pen pictures which give an overview of the MOT, HGV and PSV test changes (in respect of the items below), brought about by an amendment to Annex II to Directive 2009/40/EC and introduced by Commission Directive 2010/48/EU.

These changes will take effect from 1 January 2012.

1) Brakes

2) Steering & suspension

3) Lighting

4) Other items

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http://www.dft.gov.uk/vosa/publications/manualsandguides/vehicletestingmanualsandguides.htm

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