Load Securing for Road Transport

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Delivering safe, efficient, sustainable logistics
Load Securing

• Why load securing is important
• The legislation
• VOSA and HSE pilots
• Principles and physics of load securing
• DfT & EC requirements and Codes of Practice
• BS & EN Standards
• VOSA enforcement
Load Security ???

why is securing loads important?

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1. to ensure that:

Load remains on the vehicle whilst on the road
2. to ensure that:

Vehicle stability is not compromised
3. to ensure that:

Load does not present hazard when loading/unloading
‘The load carried by a motor vehicle or trailer shall at all times be so secured, *if necessary by physical restraint other than its own weight*, and be in such a position, that neither danger nor nuisance *is likely to be caused* to any person or property by reason of the load or any part thereof falling or being blown from the vehicle or by reason of any other movement of the load or any part thereof in relation to the vehicle.’

**STATUTORY INSTRUMENTS**

**1986 No. 1078**

**ROAD TRAFFIC**

The Road Vehicles (Construction and Use) Regulations 1986

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<th>Mode</th>
<th>Laid before Parliament</th>
<th>Coming Into Operation</th>
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Maintenance and use of vehicle so as not to be a danger, etc.

100.—(1) A motor vehicle, every trailer drawn thereby and all parts and accessories of such vehicle and trailer shall at all times be in such condition, and the number of passengers carried by such vehicle or trailer, the manner in which any passengers are carried in or on such vehicle or trailer, and the weight, distribution, packing and adjustment of the load of such vehicle or trailer shall at all times be such, that no danger is caused or is likely to be caused to any person or on the vehicle or trailer or on a road.

Provided that the provisions of this regulation with regard to the number of passengers carried shall not apply to a vehicle to which the Public Service Vehicles (Carrying Capacity) Regulations 1984 apply.

(2) The load carried by a motor vehicle or trailer shall at all times be so secured, if necessary by physical restraint other than its own weight, and be in such a position, that neither danger nor nuisance is likely to be caused to any person or property by reason of the load or any part thereof falling or being blown from the vehicle or by reason of any other movement of the load or any part thereof in relation to the vehicle.
The Road Traffic Act

‘A person is also guilty of using a vehicle in a dangerous condition if he uses, or causes or permits another to use, a motor vehicle or trailer on a road when the purpose for which it is used or the weight position or distribution of its loads, or the manner in which it is secured is such that the use of the motor vehicle or trailer involves a danger of injury to any person.’

Which means…

both the driver and the operator of the vehicle could be liable in the event of an insecure load
HSE & VOSA focus

- HSE & VOSA campaign 2010
- Awareness
- Importance
HSE published the findings of the 2010 campaign:

1. Overall the standard of load securing observed was low
   - majority of vehicles examined did not meet the basic standard set out in the DfT Code of Practice
   - Issues were most commonly identified with flatbed and curtain-sided vehicles

2. Most common reasons for concern
   - inadequate load securing
   - not loading to the bulkhead
   - unstable loads
   - condition of webbing straps

3. **Relying on friction to secure a load**, endangers the driver of the vehicle, other road users and pedestrians, and anyone involved in or in the vicinity of unloading the vehicle.
Friction alone is not adequate

Consider the following analogies

• Seat belts / child restraints

  a passenger in a car will move independently if they don’t put their seatbelt on

  as will an item on a vehicle or trailer if not secured
Analogies…cont

• Coffee on the move…?
  – Would you drive with the lid off?
  – How is it secured in the car?
Analogies…cont…containment & restraint

Riding on a bus

Passengers are ‘contained’ within the bus

Similarly

Loads are ‘contained’ within the body

Standing passengers ‘hold on’

The rail / strap is a form of ‘restraint’
The weight will hold it….

Sir Isaac Newton’s laws

• when objects are in motion, they will continue to move in the same direction and at the same speed unless some other force acts upon them to retard or stop their movement.

• Those forces could be vehicle structure, restraints etc.
Load restraint

- Preventing load moving relative to the vehicle

Load containment – preventing loads from falling from the vehicle – is not the same as load restraint
The load securing system

- If the load is in contact with the headboard, or blocked, the headboard can be considered part of the ‘system’

- Otherwise, the load must be secured as if the headboard was not there (this is not practical for most heavy loads)

- Contact with the headboard or otherwise blocking is critical for heavy loads
Contact with headboard is critical
Securing a load for transport is normally achieved through a combination of:

- the vehicle structure (the headboard and any side walls)
- lashings (webbing or chain)
- blocking, dunnage, chocks, cradles etc
Curtains…

Even if the curtain stops the load falling, load shift can still occur
Curtains...
Restraint methods

Shrinkwrap is not load restraint equipment!
Standard roof mounted straps

Not generally considered adequate load restraint
Load restraint equipment

FTA

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DfT code of practice

Combined strength of the load restraint system must be sufficient to withstand a force:

- 1g of load in forward direction
- 0.5g to the side
- 0.5g to the rear

EU guidelines side/rear - same

“But my trailers are EN12642 XL…”
BS EN 12642

EU standard for commercial vehicle and trailer body construction
• 2 standards - ‘L’ or ‘XL’

EC best practice guidance
• Body structures should be based on EN 12642

Vehicles & trailers in the UK do not have to be built to the Standard
BS EN 12642-L
Box body – side

Curtain

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BS EN 12642 - XL

XL curtains
• 40% payload

Caution !!

• XL standard is for the complete structure

• Can withstand 40% payload IF:
  – Sliding-friction coefficient of minimum $\mu_D = 0.3$
  – Positive loading in the direction of travel
  – Loading width minimum 2.4m
  – Max. permitted separation load/rear wall 150mm

(above = typical requirements)
VOSA – ‘focused approach’

- Load securing MATRIX
  - Guidance for examiners
  - Vehicle & body types
  - Different load types
  - Method of load securing
  - Action – Prohibition / Advice
  - Gradual training roll-out

Already complying with C&U? - will see no difference

‘REASONABLE ATTEMPT’
Summary

- Loads should be secured so that they do not move relative to the vehicle bed during transit.
- Loads should be placed against the headboard. If this is not possible, the gap to the headboard should be filled with blocking or an intermediate bulkhead could be used.
- Curtains are generally not suitable for load restraint.
- Load restraint equipment should be appropriately rated for the load it has to restrain and in good condition.
- The key to load security is adequate risk assessment by someone competent to do so.
Assess the risk

When assessing a vehicle, the question should be “what if…?”

What is physically preventing it moving or from falling off the vehicle?

C&U.. *neither danger nor nuisance* is likely to be caused

Guidance is available
Thank you

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