# Load securing for the brewing and drinks industry

Supported by

Vehicle & Operator Services Agency





An FTA best practice guide

Edition I • May 2013

A guide for operators, drivers and vehicle loaders

Delivering safe, efficient, sustainable logistics

# Foreword

## Vehicle & Operator Services Agency

The Vehicle and Operator Services Agency is a Government agency with road safety responsibilities. Annually, load security issues cause numerous incidents in the UK, resulting in fatal and serious injuries. Insecure loads also cause considerable disruption to the road network, bringing with it significant adverse financial implications.

Working with the Health and Safety Executive and the Health and Safety Laboratory to improve awareness of safe loading, we have developed a pragmatic approach to encouraging best practice and enforcing load security.VOSA is supportive of guides like this and its promotion of best practice within the industry.

Gordon MacDonald, Head of Enforcement Scheme, Vehicle and Operator Services Agency

FTA would like to thank the following organisations for providing vehicles and loads which feature in the images in this guide.



Safety of operation has always been a key focus for Carlsberg and we were the first drinks distributor to introduce internal nets in all our 320 dray vehicles.

Carlsberg has both welcomed and contributed to the publication by FTA with VOSA endorsement of this best practise guide to load securing. We will be actively promoting the guide throughout our network of depots and also our suppliers and customers.

Andrew Davis, National Fleet Engineer, Carlsberg UK Ltd

**DOWNTON** delivers CM Downton are proud to have been part of the working group and contributed to the publication of this document.

The brewing and drinks industry produce a diverse range of products in numerous packaging configurations; this, and the nature of the product itself, presents a challenge when ensuring loads are adequately secured for transport. This guidance provides practical advice on securing loads effectively and how to stay legally compliant.

Nigel A Willis CMIOSH, MIIRSM, MInstLM, Group Health and Safety Manager, CM Downton



Marston's is pleased to have been member of the working group that produced this brewing and drinks industry best practice guide.

The aim of the publication is to provide clear practical advice on load security for both primary and secondary (multi-drop) deliveries of keg, cask and small pack. This will enable the operator to safely deliver a diverse range of products whilst remaining legally compliant.

Peter Murphy, Logistics Operations Manager West, Marston's plc



The best practice guide to load security in the brewing and drinks industry will be an invaluable aid to our truck operators. There is a lot of information available to operators, however it is general information for all load types and not specific enough to give clear guidance for the carriage of, and load security of, the brewery industry related goods.

Chris Fleck, Divisional Engineer, Tradeteam

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#### FREIGHT TRANSPORT ASSOCIATION

An FTA best practice guide to load securing for the brewing and drinks industry

Edition I • May 2013

Editor: Andy Mair Production: Hilary Kingdon Design: Tim Holdstock

This guide focuses on load securing practices for vehicles used in the brewing and drinks industry. It contains basic guidance and methods of securing loads transported in this specific sector of road transport and has been produced in conjunction with the Vehicle and Operator Services Agency.

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For details of how to join FTA contact the Member Service Centre on 08717 11 22 22\*

\*Calls may be recorded for training purposes

FTA represents the freight interests of business throughout the UK. Its members range from small and medium sized businesses to multinational companies involved in operating across all modes of transport. Its 14,000 members operate over 200,000 heavy goods vehicles – half of the UK fleet and in excess of one million light vans. They are also responsible for consigning over 90 per cent of freight moved by rail in the UK and consign over 70 per cent of UK visible exports. This unique multi-modal mandate enables FTA to speak authoritatively on all aspects of freight, reflecting the transport needs of industry within the economy.

FTA's role is to help its members to ensure their transport operations are safe, legal and efficient. It achieves this through timely, accessible and relevant information and support founded on the Association's strong representational presence at local, national and European levels. This information is reinforced by industry-leading services. FTA's Vehicle Inspection and Tachograph Analysis Services enable members' legal compliance performance to be regularly audited and benchmarked. FTA's Training team offers members consistently high pass rates in transport qualifications.

Members' day-to-day operational management is supported by Shop**fta** in providing transport consumables (www.shop.fta.co.uk), and FTA's Member Advice Centre which deals with over 26,000 questions each year:

# ntroduction

## Background

The Vehicle and Operator Services Agency (VOSA) is introducing training for enforcement examiners with a focused approach on load securing enabling them to identify high-risk loads. The aim is to promote clarity and consistency for operators in enforcement of load securing and the training is expected to be completed by summer 2013. This initiative has been in development for some time following campaigns in 2009/10 by the Health and Safety Executive (HSE) and VOSA, when enforcement examiners inspected the loads of vehicles to ensure that they were being transported securely. The campaigns highlighted concerns identifying that significant numbers of vehicles were found to have loads which were not sufficiently restrained.

The campaigns led by HSE and VOSA on load securing checks, and the focused approach by VOSA on this area of enforcement, has led to many goods vehicle operators and drivers reviewing how loads are secured on their vehicles. Inadequate load securing methods will lead to action by VOSA which could result in prohibition action. Operators within the drinks and brewing sector have been reviewing how loads are secured on vehicles and a number of FTA members who operate within this sector have been involved in a working group looking at existing loading practices, and sharing good practice on how to comply with the requirements of legislation and VOSA requirements at roadside checks. The vehicles used to transport goods within this sector are typically curtain-side vehicles and trailers of the type which will be checked for load securing by VOSA, and the products carried also fall within the 'most at risk' category within VOSA's assessment matrix. It is vital therefore that operators. loaders and drivers in this transport sector ensure that loads are correctly secured for transport.

### The importance of securing loads for transport

Vehicles carrying unrestrained loads are also a safety risk to their drivers and other staff involved in loading and unloading them. On the road they also pose a danger to other road users and the public at large. An unrestrained load can significantly increase the risk of the vehicle rolling over or spilling its load onto the highway.

RIDDOR and HSE processes require near misses and incidents to be reported through the health and safety at work procedures. Several people sustain injury, sometimes serious and fatal injuries, as a

# Notes on the use of the information and guidance contained in this guide

The aim of the information contained in this document is to provide some basic guidance on methods of securing loads transported on goods vehicles used in the drinks and brewing industry. It has been produced in conjunction with FTA members from this sector of road transport, and in liaison with the Vehicle and **Operator Services Agency** (VOSA). The variety of loads, vehicles and operating conditions make it impossible to provide specific guidance on how all loads should be secured for transport and therefore the information in this document should only be used as a guide and not be regarded as definitive, exhaustive or be taken as legal advice. Loading circumstances likely to be encountered by drivers and operators will vary considerably, and the principle requirement for load securing is adhering to the legislation which governs the safety of loads on vehicles. Both loading and unloading of a vehicle should be subject to a risk assessment which will be specific to the vehicle used, load carried and circumstances in which the vehicle will be operated. The overriding fact with regard to adequate load securing is not to rely on the physical weight of the load to keep it secure.

result of load security. This can be whilst loading, unloading or during the vehicle's journey.

To protect drivers and other road users, the RoadVehicles (Construction & Use) Regulations 1986 indicate that loads must be secured, if necessary by physical restraint other than their own weight, so they don't present a danger or nuisance.

The UK Road Vehicles (Construction and Use) Regulations 1986 state:

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 1998 (as amended) contains the corresponding offence for this legal requirement, stating:

'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.'

This means that both the driver and the operator of the vehicle could be liable in the event of an insecure load. The penalties will depend on the seriousness of the incident but could include penalty points, endorsement, heavy fines and the possibility of prison sentences.

### Roadside enforcement

VOSA can enforce a range of regulatory powers, including prohibiting the continued use of the vehicle if it feels there is serious risk to other road users, workers or to the public. The Agency has produced enforcement guidance and a matrix to assist examiners in assessing load securing methods. The guidance distinguishes between various types of load and has three categories of severity for assessing load securing.

There are five key elements to the guidance and matrix.

- I Vehicle body types
- 2 Load types
- 3 Load security defect categories
- 4 Assessment flow chart
- 5 Enforcement policy table

#### I Vehicle body types

The following body types should be assessed for load security	The following body types do not need to be assessed unless there is reason for concern
Flatbeds	Box-siders
Curtain-siders	Refrigeration trailers
Lowloaders	Containers with twist locks
Skip lorries	Tilts
Car transporters	Live animal transporters
Bulk tippers	

The vehicle body type table above classifies curtain-siders as one of the vehicle types which will be checked at roadside for load securing.

#### 2 Load types

Туре А	Туре В	Туре С
Metal pipes, sheet or bar	Timber	Clothing
Reinforced concrete	FIBCs/bulk powder	Wood chip
Bricks, stone or concrete	Rolls cages	Waste paper
Vehicles (including scrap)	Bagged aggregate	Coal bags
Plant machinery	Empty skips stacked 3 high	Bulk material (in tipper)
Reels (steel, wire or paper)	Heavy palletised goods (pallet weight over 400kg)	Packaging material
Kegs and barrels		Single loaded skips
Stacked loaded skips		Empty skips <3 high
Empty skips staked >3 high		Light palletised goods (pallet weight
Metal castings		400kg or less)
Glass		
Containers/work cabins		

The load type table above classifies kegs and barrels in the 'most risky' category with regards to load securing requirements.

#### 3 Load security defect categories

Category I	Category 2	Category 3
No load securing > Im gap between front of load and vehicle headboard* Unstable load affecting vehicle stability or likely to topple from vehicle	>30cm gap between load and vehicle headboard* Unsheeted load in bulk tipper or skip Inadequate load securing leading to likely risk of harm	Lashings on ropehooks*** Minor damage to headboard not affecting structural integrity Unsuitable load securing Poor condition of securing againment
Severe structural damage to headboard or gaps in headboard that allow load penetration Item loaded over height of headboard**	Unsuitable stacking of load items likely to lead to risk of harm Height of load likely to affect vehicle stability	Unsuitable vehicle for load

\*Unless other means of preventing forward movement have been used.

\*\* This refers to individual items, such as bundles of pipes. A single indivisible item may be loaded over the height of the headboard as long as the headboard supports it to the height of the centre of gravity.

\*\*\* This is always poor practice but there may be no other suitable attachment points. Securing to the chassis or side rave is best practice.

NB - For curtain-sided vehicles carrying light palletised and extremely light loads, the curtains could feasibly be considered to constitute a sufficient restraint mechanism in their own right.

#### 4 and 5 VOSA assessment flow chart and enforcement policy matrix

VOSA examiners will use the flow chart below to carry out an initial assessment of the adequacy of loads secured on vehicles.



Any problems concerning the securing of the load highlighted from the flow chart procedure above will then be assessed against the matrix on the right and may result in prohibition action (P) for higher risk circumstances or advice (A) for minor problems.VOSA's approach to minor problems in the way vehicles have been loaded and secured will be to give advice rather than enforcement action wherever possible.

### Risk assessing the securing of loads for transport

The VOSA flowchart provides a useful guide to carrying out a risk assessment for the securing of loads for transport. Loaders and drivers should assess loads in accordance with the questions in the guidance and if any issues are identified from this basic assessment then action should be taken to ensure that the load cannot slide, topple, fall from the vehicle or be in an unstable condition presenting a likelihood of danger or injury due to its stability or security. This could mean re-positioning on the vehicle in order that the load is a 'positive fit' with no gaps between products/headboard/sides or rear doors, or by applying additional restraints such as straps, netting, secondary (inner) curtains/straps or other restraint methods.

A basic risk assessment should include consideration of the following.

- Use of safe loading/delivery/unloading plans
- Issue of proper instruction to loading/unloading staff on the safe loading/unloading plan and the procedures to be followed
- Proper and competent supervision of loading/unloading operations
- Proper instruction and training of drivers in correct methods of load restraint and correct use of load securing and restraint equipment; also the limitations of such equipment and the need for regular checking
- Regular checking of the integrity of load restraint equipment, containment curtains/sheets and straps, vehicle beds etc

When assessing how the load is secured for transport, use of the VOSA flow chart provides the basis for any risk assessment, and the following should be considered in order to determine the adequacy of how loads are secured.

- Can the load slide or topple forward or back?
- Can the load slide or topple off the side?
- Is the load unstable?
- Is the load securing equipment in poor condition?
- Is there anything loose that might fall off?

If the answer to any of the above questions is 'yes' then action would be required to secure the load more adequately, as VOSA may take prohibition action if the vehicle was subject to a roadside check. More importantly, if the vehicle presents a likelihood of causing danger of injury due to its load security or stability, then this would be a serious safety issue and a breach of the legislation which could result in prosecution including points, endorsement and possible imprisonment for both the driver and operator of the vehicle.

### Positive fit

If the load completely fills the load bed with no gaps to the headboard, rear doors and sides, and the body is strong enough to hold the load in place, loads may be carried without additional securing and this is called positive fit. However, standard curtain-side vehicles are not normally strong enough to the sides to provide adequate strength unless they are constructed to an XL rated standard. Bodies constructed to this standard will be marked accordingly as shown in the image below, and are rated to retain 40 per cent of the load to the side by the curtain. Depending on the payload weight, further restraint may be required to meet the Department forTransport 50 per cent guideline load restraint requirement.

Inner secondary containment curtains and 'kites' fitted to standard brewery type vehicles designed with integral strength rated straps do provide additional load containment capability and should always be used appropriately if loads are to be carried using the positive fit load securing method.



EN 12642 XL standard

# Primary delivery vehicles

The example below shows a primary delivery vehicle which is loaded in a satisfactory manner. The barrels/kegs are located on pallets which provide a degree of stability, particularly when stacked as shown. The pallets are loaded in a 'positive fit' manner which is up to the trailer headboard with no gaps, no gaps between the load items and loaded to the full width of the trailer bed. The use of internal containment curtains (which have rated integral strapping) means that the load is contained in a 'positive fit' state which will prevent movement of the load during transit.

There is no direct lashing of the load to the trailer bed in this example. If the loading was not carried out in a 'positive fit' manner as shown, or if there were no internal containment curtains on the trailer, then alternative restraint methods would be required to secure the load such as lashings or sheeting etc.

In this example there is no evidence of load shift, and shows a uniform and well positioned stacked load.



Internal containment curtain with restraint straps is used, it is in good condition and covers the full load area Positive loading to the full width of the trailer bed in contact with, and contained by, the inner curtain (the load fills the width of the trailer) Loaded on pallets which provide improved stability of stacked loads (the use of purpose-designed locator boards would further improve stability)

Positive loading up to the headboard, with no gaps

Minimum gap between load items

Adequate internal containment curtains and straps for the entire load



Condition and number of straps and buckles is adequate



Inner containment curtain rail is in good order and condition, strapping attachment is in good order

Minimum gaps between load product

The image below shows the rear section of the inner side containment curtain partially opened for examination purposes. Again, this image shows that the load is 'positively loaded' along the full length of the trailer and the gap to the rear door is filled in with pallets strapped to the bed of the trailer which act as dunnage. It is just as important to minimise any gaps to the rear of the trailer as it is to the headboard. Minimising gaps will prevent loads from moving relative to the vehicle bed, and if load shift was to occur the smaller the gap the less momentum the load would accumulate during movement – it is much easier to prevent a stationary load from moving than one which is in motion.

The use of inner containment 'kites' as shown in the image prevents movement of the load in a rearward direction and helps to retain the 'positive fit' element of the loading.



Rear inner 'kite' curtain used to contain/restrain load in a longitudinal manner, preventing movement of the load rearwards

Pallets used as dunnage to fill the gap for positive loading to the rear doors

Two 'kites' used, one on the rear of the load and one on pallets which are being used as dunnage

Pallets are lashed with straps fixed to dedicated lashing points in the trailer bed

### Unsafe primary loads

In the example shown below the barrels are stacked on locator boards, inner containment curtains are used and a rear containment 'kite' is in use. However, one of the locator boards is in poor condition which has led to the upper layer of barrels shifting and becoming unstable, resulting in the load being in an unsafe condition. Loads found to be in this condition would attract possible prohibition action if detected by VOSA during a roadside check.



Locator board in poor condition which is likely to have caused the shifting of the load, causing the upper barrels to become unstable Load shift evident and presents immediate likelihood of causing danger of injury – possible prohibition action by VOSA would result





Evidence of load shift. Possible prohibition action by VOSA would result

# Secondary delivery vehicles

The example on the following page shows a secondary delivery vehicle which is loaded in a satisfactory manner. The boxed products are shrink wrapped and located on pallets which are positively loaded up to the headboard with no gap. There are no gaps between the load items and loaded to the full width of the vehicle bed. The use of internal containment curtains (which have rated integral strapping) means that the load is contained in a 'positive fit' state which will prevent movement of the load during transit. Locator boards are used to provide a degree of stability particularly when stacked as shown, placing locator boards on top of the barrels as shown provides additional stability.

There is no direct lashing of the load to the vehicle bed in this example, if the loading was not carried out in a 'positive fit' manner as shown, or if there were no internal containment curtains on the vehicle, then alternative restraint methods would be required to secure the load such as lashings or sheeting etc.

In this example there is no evidence of load shift, and shows a uniform and well positioned stacked load. The only possible issue with this load is the loosely placed box of wine situated on top of the palletised load, which itself is not secured. This is likely to result in VOSA advising that the securing of this product is not adequate, however if the item presented a likelihood of causing danger of injury due to its load security or stability when examined, then prohibition action could result.



Straps have load restraint rating tags on them

The loosely placed box of wine situated on top of the palletised load in itself is not secured – this could be advisory or prohibition action by VOSA, depending on how it is presented at the time of inspection

Locator boards used on kegs and barrels improving stability particularly on stacked loads. Use of locator boards on top of kegs and barrels further improves stability

Boxed products are shrink wrapped on pallets

Positive loading up to headboard with no gap, minimal gaps between load products

Inner containment curtains and straps used, in good condition and adequate to contain the full length of the load. Positive loading to the full width of the vehicle bed in contact with, and contained by, the inner curtain (the load fills the width of the vehicle)



Inner curtain in contact with product which helps to prevent movement of the load and helps to retain the 'positive fit' element of the loading. This design is commonly referred to as a 'load hugger' body where the inner and outer curtains are in contact the load, which can give the appearance that the curtains are bulging. This is how they are designed and the appearance of a bulging curtain on this design is not a cause for concern

Locator boards used on kegs and barrels improving stability particularly on stacked loads. Use of locator boards on top of kegs and barrels further improves stability



The image below is another example of the use of inner containment curtains and shows a uniformly loaded vehicle in a positive fit manner with minimal gaps between load products and headboard. The barrel which is laid on its side to the rear of the vehicle would attract prohibition action by VOSA as the barrel is insecure and presents a likelihood of causing danger of injury due to its load security or stability.



Locator boards used on kegs and barrels improving stability particularly on stacked loads Barrel towards the rear not secured – in state presented would attract prohibition Below is a close-up view of an insecure barrel which would attract prohibition action by VOSA. The barrel is not secure and will only be prevented from falling from the vehicle by the curtains. It is free to roll about on top of the other kegs. If only restrained by the curtain, then prohibition action would be considered. At a minimum advice would be given.



The image below shows the use of a containment 'kite' which is being used to contain the load and prevent it from moving rearwards. The palletised load has the product shrink wrapped to the pallet which provides improved stability, and gaps between load products are minimal. As a general rule, and in line with the VOSA assessment matrix, any gaps in the load should not exceed 30cm.



Product is shrink wrapped to the pallet for improved stability

Gaps between product/load should be minimal, any gaps should not exceed 30cm

The barrel is unrestrained and has shifted – VOSA prohibition action would be considered

Vehicle presented with loads which could topple or fall due to lack of restraint or containment, causing immediate likelihood of danger of injury due to load security or stability - will be dealt with by prohibition action

Containment 'kite' is used to contain the load and prevent it from moving rearwards Below is a close-up view of an inner containment 'kite' being used to contain the load and prevent it from moving rearwards. The palletised load has the product shrink wrapped to the pallet, however the pallet in itself is not restrained or positively secured for transit and a restraint is required on the single pallet. If the vehicle was presented at a roadside check as shown with the palletised load unsecured, it would attract the attention of VOSA and the likely outcome would be advice that the load is not sufficiently restrained. If there was evidence that the load has shifted, or if the load presented a likelihood of causing danger of injury due to its load security or stability, then prohibition action would result.



As a general rule, and in line with the VOSA assessment matrix, any gaps in the load should not exceed 30cm. The example in the image below showing a gap between the barrels and palletised load would attract advice from VOSA as the barrels could move forward. Gaps should be filled with packing or dunnage to reduce the gap and prevent movement of the load.



Use of rear containment kite and inner side containment curtains

Unrestrained pallet of bottled product would result in advice from VOSA. If load shift was evident or when examined the load presented a likelihood of causing danger of injury due to its load security or stability, then prohibition action would be taken

Excessive gap between loads – max 30cm (VOSA would advise on this example). Gap should be reduced or filled with packing/dunnage

Barrels not secured or prevented from moving/toppling forward



# Use of packing to reduce gaps between loads

Gap filled with packing/dunnage

Gaps between loads should be minimal; use of locater board to fill any gaps.

The use of packing to reduce gaps between loads can be seen in the image below. Here, lightweight locator boards are being used to reduce the gaps between load product.



Locator boards are being used to reduce the gaps between load product. The use of locator boards below, on top of and between the kegs would improve the stability in this example

The example below shows a number of unsecured barrels to the rear of the vehicle loading area. Vehicles presented in this manner would attract the attention of VOSA at roadside checks and, depending on the physical state of the load at the time of examination, would result in advisory or prohibition action. Minor issues which do not present an immediate danger would be dealt with by advice, but if the load could topple or move due to lack of restraint or containment and present an immediate likelihood of danger or injury, would attract prohibition action. The barrels shown in the example below require additional containment or securing for transit.



Unsecured barrels would result in prohibition action if the load could topple or fall due to lack of restraint or containment, and present an immediate likelihood of causing danger of injury

# Curtain and straps designed with restraint capabilities

Curtains, inner curtains and straps which are designed with restraint capabilities should ideally be marked with a strength label. The absence of a label does not mean the assembly is not fit for purpose providing it is in good condition and adequate straps are present.



Curtain and restraints with straps which are designed with restraint capabilities should ideally be marked accordingly. In this example the label attached indicates the strength capabilities of the strap



Example of retaining strap load rating label

The picture below shows where possible restraint straps should be attached to dedicated load restraint points fitted to the vehicle. If such restraining points are not available then the chassis or raves should be used as restraining points.



Dedicated load restraint points should be used (where fitted) as these provide the best method of attachment for straps

### Condition of straps

The condition and strength of ratchet straps used to secure loads is an important part of load securing. Damaged, frayed, worn or knotted straps should be replaced. The spare end of the strap once it has been through the ratchet should not be used to further secure the load.

The locking mechanism on the ratchet should be in good condition and have the ability to be locked.

# Hire vehicles

Hire vehicles are rarely fitted with restraint and containment equipment suitable for loads transported in the drinks and brewing sector – such as inner containment curtains and transverse 'kites'. However, loads carried on hire vehicles are required to be secured for transport and other methods of restraint may need to be deployed. Standard load strapping is one option, but other methods such as sheeting, netting and inner tarpaulins can be used. It is vital to ensure that discussions and planning with the hire company take place in good time in order that alternative load securing equipment can be sourced.

The examples below show the use of a load securing sheet with built-in restraint strapping, which is an effective method of load restraint.











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