

Prevention of bridge strikes

A good practice guide for
transport managers



Department for
Transport



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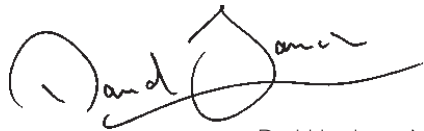
Foreword

A bridge strike can result in injury or loss of life to road users. A bridge strike may cause a serious incident on the railway, such as a train derailment. Bridge strikes also cause significant costs, disruption, damage and delay to the freight industry, other road users, and maintainers and users of the railway.

To raise the awareness of the risk and consequences of bridge strikes, Network Rail, in conjunction with the freight and construction plant transport industry, have produced two guidance booklets. The two documents are for use by professional drivers and transport managers.

This booklet is for the use of transport managers, and it provides advice and recommendations to be followed during the planning and carrying out of movements of freight by road in order to prevent bridge strikes occurring.

I hope you find this guide informative. By following the guidance you should prevent yourself and your company being involved in a bridge strike.

A handwritten signature in black ink that reads "David Jamieson". The signature is stylized with large, rounded letters and a long horizontal flourish extending to the right.

David Jamieson MP,
Parliamentary Under Secretary of State,
Department for Transport

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Introduction

This good practice guide is intended to raise the awareness of the risks and consequences of bridge strikes. It has been produced for transport managers and others involved in planning routes and schedules for the transportation of freight and construction plant on Britain's road network.

Between April 2003 and March 2004, there were 1870 bridge strikes at railway bridges over a road reported to Network Rail. Historically, the causes directly attributable to the freight and construction plant transport industry are:

- | | |
|---|-----|
| • load moved | 3% |
| • foreign driver | 3% |
| • arch - lorry not in the centre of the road | 11% |
| • lifting arm left in raised position | 26% |
| • driver did not know the height of the vehicle | 32% |

The principles and guidance contained in this guide also apply to small or light goods vehicles below the operator licensing threshold and other exempt vehicles.

This guide has been produced by Network Rail in conjunction with organisations representing the freight and construction plant transport industry to enable risks associated with bridge strikes to be identified and to provide guidance to prevent bridge strikes.

The following organisations have been involved:

- Freight Transport Association
- Road Haulage Association
- Construction Plant-hire Association
- Heavy Transport Association
- Transport and General Workers' Union
- Recruitment and Employment Confederation Drivers' Section
- National Farmers' Union
- Associations of Chief Police Officers

What is a bridge strike?

A bridge strike is an incident in which a vehicle, its load or equipment collides with a bridge. Most bridge strikes occur where roads pass under railway bridges.

Railway bridge strikes affect the safety of trains and may cause damage to the bridge as well as possible death or injury to the vehicle driver and members of the public.

Bridge strikes may also occur at bridges over public roads carrying footpaths, canals, and other roads.



A waste lorry on its side following a bridge strike

What is the law?

You should make every driver aware that any bridge strike is a road traffic collision and failure to report a bridge strike is an offence.

For most vehicles, The Road Vehicles (Construction and Use) Regulations 1986 SI No.1078 as amended requires the maximum height of the vehicle in feet and inches to be displayed on a notice in the cab of a vehicle when the overall travelling height is more than 3 metres.



Height notice in the cab

The Road Vehicles (Construction and Use) Regulations 1986 SI No.1078 as amended requires vehicles with high level equipment with a maximum height more than 3 metres to be fitted with a device to give a visible warning to the driver if the equipment is raised whilst being driven, unless the equipment can be fixed in position by a locking device.

It is an offence for you as a transport manager to cause or permit a vehicle to be used in breach of the regulations.

You should ensure that on every occasion before a journey commences the driver checks that the correct maximum height of the vehicle is displayed in the cab.

It is good practice to display the trailer height on the trailer:



Trailer height indicated on the trailer

Road traffic signs

You should be aware that road traffic signs are provided at bridges to show the maximum permitted vehicle height when less than 16'3".

- red circles prohibit
- red triangles warn

If a vehicle is higher than the dimensions shown on a circular road sign, the driver must stop and must not pass the sign. If the

vehicle is higher than the dimension shown on a triangular road sign at the bridge, the driver should not pass the sign.



Special signs are sometimes used on arch bridges. White lines on the road and 'goal posts' on the bridge may be provided to indicate the extent of the signed limit on vehicle height, normally over a 3 metre width. There may be additional sets of 'goal posts' showing lower limits towards the kerbs.



White lines on the road indicating the extent of the signed vehicle height limit

What are the consequences of bridge strikes for vehicle operators?

Striking bridges is potentially dangerous and expensive.

Dangerous because

- the lorry driver may be killed or suffer physical or psychological injury
- bridge strikes can also be fatal to, or injure other drivers and members of the public
- the safety of trains and the travelling public is put at risk
- the public may be put at significant risk should the bridge strike involve hazardous loads such as flammable liquids or toxic substances



A crushed car as a result of a bridge strike



Certain vehicles carrying dangerous goods present additional hazards which must be considered

Expensive because

- your company will be liable for costs due to the bridge strike including:
 - an examination of the bridge
 - repairing the damage to the bridge
 - replacement of any damaged road signs
 - vehicle recovery
- your company will be liable for the damage to your vehicle and any damage caused to your load
- your company may lose business due to the vehicle and driver being off the road
- your company could be required to pay increased insurance premiums
- your company may also be liable to prosecution
- the good repute of your company may be jeopardised
- your company's operator's licence may be suspended, curtailed or revoked



A damaged load on a car transporter



A damaged trailer and load

What are the consequences of bridge strikes to the railway?

- derailment of passenger trains with the potential for catastrophic loss of life
- derailment of freight trains with potential for a major incident or environmental damage
- damage to railway infrastructure
- delays and disruption to trains

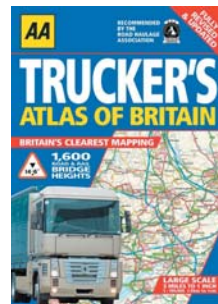


A bridge strike can seriously damage railway bridges

Actions to prevent bridge strikes before the journey

Route planning

- the risk of bridge strikes should be assessed based on the height and width of the vehicle, and its load or equipment
- routes should be planned in advance, and routes selected to eliminate the risk of bridge strikes
- routes for vehicles under maintenance or on test or diversion should also be planned to avoid bridge strikes
- delivery schedules should not cause the driver pressure, stress or fatigue as this may increase the risk of bridge strikes
- the 'Trucker's Atlas' is a valuable source of information of limits on vehicle heights under bridges on 'A' and 'B' roads
- 'Truckstar' is available for certain locations and areas throughout the country
- software routing systems that include information on limits on vehicle heights under bridges are available
- guidance on limits on vehicle heights under bridges may also be obtained from the local highway authorities
- routes for vehicles with a safe travelling height over 16'3" should be checked with the relevant highway authorities



Vehicle height checks

You should:

- advise drivers of the overall travelling height
- ensure that drivers check the maximum height of the vehicle, its load or its equipment before commencing a journey



Checking the height of a car transporter using a telescopic measuring device



Checking the height of a trailer using a telescopic measuring device

- ensure drivers check the maximum height again after loading, unloading or reloading as the trailer suspension characteristics could increase the height of the vehicle
- ensure the correct height is displayed in the cab at the start of every journey and following any change in the load
- remind drivers that at arch bridges the signed height is only available through part of the bridge and vehicle width is to be considered
- ensure special consideration is given to wide loads over 3m at arch bridges, as the maximum height available will be less than the signed limit on vehicle height

The maximum height of any vehicle, its load or equipment can be checked using simple hand held devices.

The roadworthiness checklist provided to the driver should include:

- the maximum height of the vehicle
- that height indicators are correct and displayed in the driving cab

Appendix 1 provides a route and vehicle check pro-forma for use by drivers to record checks carried out to aid the prevention of bridge strikes.

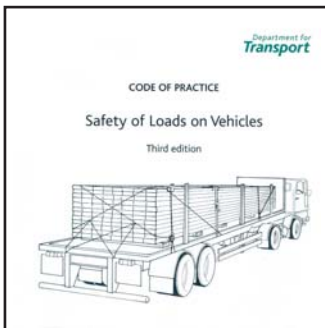


Damage caused to a bridge by an unsecured equipment arm

Security of load and equipment

You should:

- ensure that drivers check that loads and equipment are properly secured before starting a journey
- ensure all drivers are adequately trained in load security



Guidance to minimise the risk of bridge strikes due to unsecured loads and equipment can be found in the Department for Transport Code of Practice Safety of Loads on Vehicles.

All equipment fixed to or carried on the vehicle must be secured and transported in accordance with the Code of Practice.

Details of load securing courses can be obtained through the Construction Industry Training Board website www.citb.org.uk

Actions to prevent bridge strikes during the journey

- ensure that all drivers in your company are provided with a copy of Prevention of Bridge Strikes - a Good Practice Guide for Professional Drivers, and that they are briefed on the contents
- ideally two-way communication should exist between your company and the driver although all need to remember that:
 - the driver must maintain proper control of the vehicle at all times
 - two-way communication should only take place when the driver has stopped
 - it is an offence to use a hand-held phone or similar device whilst driving
- unplanned or emerging situations arising from road closures or diversions etc. should be communicated
- you should ensure that drivers are provided with guidance and assistance on alternative routes or actions to be taken to avoid low bridges when advised of road closures or diversions
- drivers should seek guidance from your company of emerging situations as they arise

What action should be taken if a bridge strike occurs?

- at a railway bridge, ensure that Network Rail is informed of the bridge strike using the telephone number on the identification plate
- ensure the police are advised using the 999 system
- you should monitor and investigate the causes of a bridge strike so that your company may learn lessons to avoid a repeat incident

Training and competence

A freight transport or construction plant transport company's Health and Safety Policy Statement should include the management of the risk of bridge strikes.

The prevention of bridge strikes should be included in training programmes and safety briefings for drivers and other staff.

Appendix I

Professional driver's route and vehicle check

Date		Driver's name	
Vehicle no.		Trailer fleet/serial no.	
Route	From	To	Via
Load type	<input type="checkbox"/> Box <input type="checkbox"/> Container <input type="checkbox"/> Curtainsider <input type="checkbox"/> Plant and machinery <input type="checkbox"/> Skip <input type="checkbox"/> Waste <input type="checkbox"/> Car transporter <input type="checkbox"/> Other (specify)		

Route and vehicle check	
Have low bridges on your route been identified?	Yes <input type="checkbox"/> No <input type="checkbox"/>
What is(are) the location(s) of the lowest bridge(s) on the route?	
What is the limit on vehicle height under bridges on your route?ftinsmetres
Is the load and equipment properly secured and safe?	Yes <input type="checkbox"/> No <input type="checkbox"/>
What is the maximum travelling height of your vehicle?ftinsmetres
Is the maximum height of your vehicle less than the limit on vehicle height under bridges on your route?	Yes <input type="checkbox"/> No <input type="checkbox"/>
What is the maximum width of your vehicle?ftinsmetres



**Know your vehicle height and width. Know your route.
Obey road traffic signs. Don't hit and run.**



Overall travelling height conversion chart



Feet/inches	Metres
16:3"	4.95
16:0"	4.88
15:9"	4.80
15:6"	4.72
15:3"	4.65
15:0"	4.57
14:9"	4.50
14:6"	4.42
14:3"	4.35
14:0"	4.27
13:9"	4.19
13:6"	4.11

Feet/inches	Metres
13:3"	4.04
13:0"	3.96
12:9"	3.89
12:6"	3.81
12:3"	3.73
12:0"	3.66
11:9"	3.58
11:6"	3.51
11:3"	3.43
11:0"	3.35
10:0"	3.05
9:0"	2.75