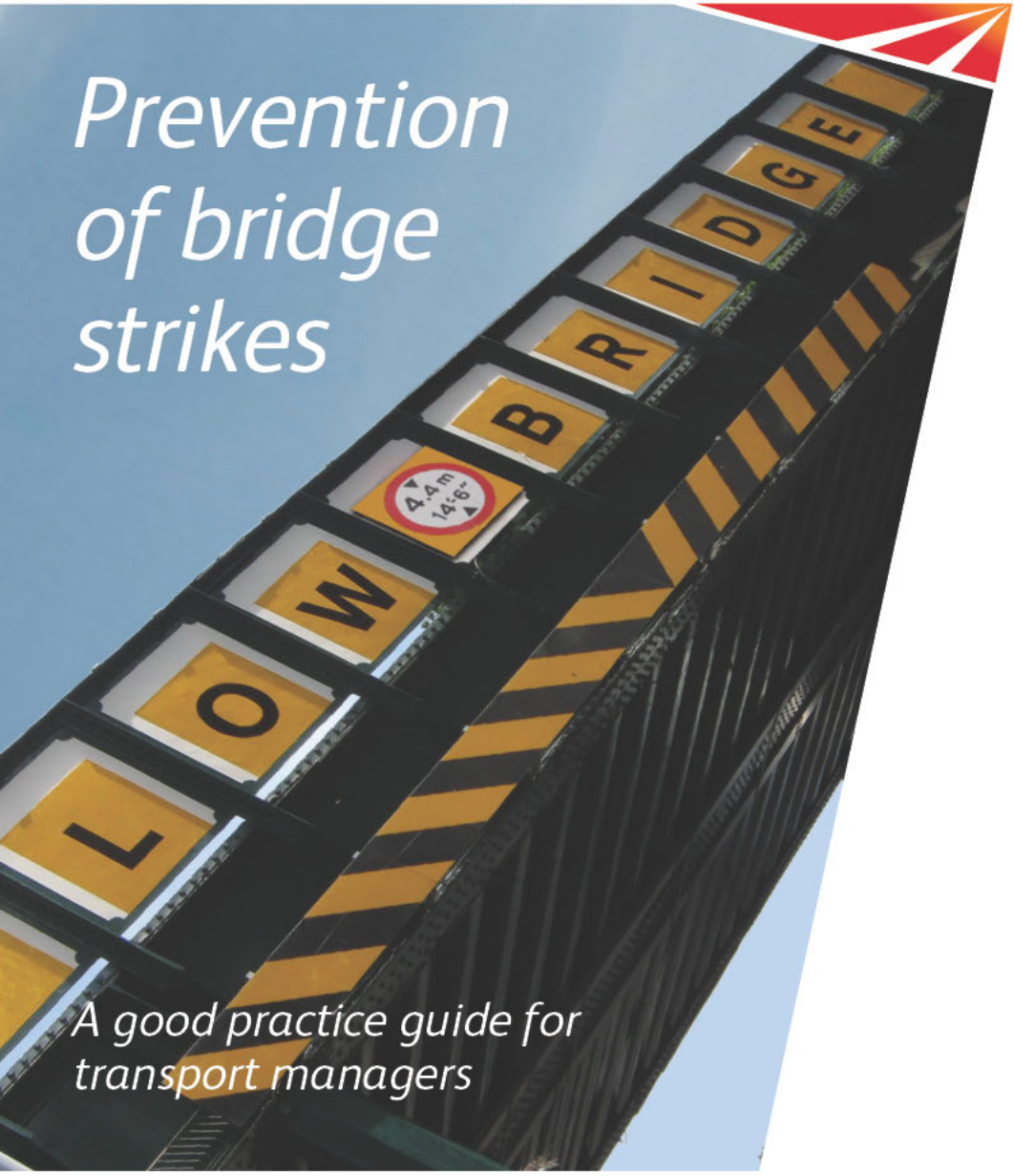
NetworkRail

Prevention of bridge strikes



A good practice guide for transport managers

CPA RHA unite the UNION PACTS RTC Drivers

NFU HTA Department for Transport ACPOS FTA

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Note

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Foreword

Bridge strikes, where vehicles, their loads or equipment collide with bridges, continue to be a significant and recurring problem. Drivers and rail passengers may experience frustration and delayed journeys, but a bridge strike has the potential to cause a train derailment with catastrophic consequences as well as loss of life or serious injury to the vehicle driver and other people nearby. Those responsible for causing a bridge strike will be liable for all costs associated with the incident - not just inspecting and repairing the bridge and the road but also the cost of train delays, which could be considerable. The company involved may lose business due to the vehicle and driver being off the road and may face increased insurance premiums or direct compensation claims.

To prevent bridge strikes, it is important that your drivers know the height of their vehicle and understand and obey traffic signs. To assist them, the Department for Transport has amended the Traffic Signs Regulations to allow local councils to use new signs that show, for example, the maximum headroom in imperial and metric units.

The Department is also working with local councils and satellite navigation companies to improve the accuracy and reliability of information available to your drivers. To prevent bridge strikes, it is important that they only use satellite navigation systems appropriate to the vehicle they are driving.

To raise awareness of the risk and consequences of bridge strikes, Network Rail, in conjunction with organisations representing local authority highway and road managers, bridge owners and the freight transport industry in conjunction with the construction plant-hire sector have produced good practice guides that will help transport managers and their drivers to avoid low bridges.

I commend this booklet to all transport managers. It provides advice and recommendations to help you understand the causes of bridge strikes – and how you can prevent them. It includes information on the traffic signs that drivers are likely to see in advance of or at low bridges, including the new warning sign in both imperial and metric units for arch bridges, and a reminder that to prevent bridge strikes satellite navigation systems that include information on vehicle height limits at low bridges should be used. A similar updated guide which includes advice on traffic signs and satellite navigation systems is available for professional drivers, and I recommend that each of your drivers is given a copy.

Following these guidelines will help you, your drivers and your company from being involved in a bridge strike.

Norman Baker

Parliamentary Under Secretary of State for Transport

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Introduction

Bridge strikes continue to be a significant problem to rail and highway/road authorities across the country. Between April 2011 and March 2012, there were more than 1500 bridge strikes at railway bridges over roads reported to Rail Authorities. A survey in 2011 indicated that drivers believed causes of bridge strikes include:

- Drivers not knowing vehicle height (32 %)
- Poor route planning (22 %)
- Drivers not understanding signs (15 %)
- Poor information about low bridges when planning a route (11 %)
- Inadequate signing (9 %)
- Drivers not believing signs (8 %)

This good practice guide is intended to provide advice to enable the risks of bridge strikes to be identified and to give guidance so that bridge strikes can be prevented. The information in this guide has been produced for transport managers and others involved in planning routes and schedules for the transportation of freight and construction plant. 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.

The following organisations have been involved:

- Department for Transport
- Freight Transport Association
- Road Haulage Association
- Construction Plant-hire Association
- 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 have the potential to cause:

- A train derailment with possible catastrophic loss of life
- Loss of life or injury to the vehicle driver or other road users
- Traffic delays and congestion
- Train delays

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

Track distortion due to a bridge strike

A curtain sided lorry overturned as a result of a bridge strike

What is the law?

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.

Notice in a driver's cab displaying the overall vehicle height

It is the transport manager's responsibility to 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.

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.

The Road Traffic Act 1988 requires any road traffic collision that causes damage to a 3rd party to be reported. Each bridge strike will cause damage to a bridge, and must therefore be reported.

Traffic signs

Traffic signs are provided at bridges to show the maximum permitted vehicle height when less than 16′-3″ (4.95 metres).

- Red circles prohibit
- Red triangles warn

If a vehicle is higher than the dimension(s) shown on a circular traffic sign, the driver must stop and must not pass the sign.

If the vehicle is higher than the dimension(s) shown on a triangular traffic sign at the bridge, the driver should not pass the sign.

At 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 an additional set of 'goal posts' showing lower limits towards the kerb.

White lines on the road and 'goal posts' on the arch indicating the extent of the signed vehicle height limit

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
- It is good practice to display the trailer height on the trailer headboard and the coupler height on the cab in a position easily visible to the driver
- 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 be planned to avoid low bridges
- Delivery schedules should not cause the driver pressure, stress or fatigue as this may increase the risk of bridge strikes
- Make use of LGV specific satellite navigation systems that include information on vehicle height limits under low bridges
- Atlases can be a valuable source of information for vehicle heights limits under bridges
- Advice on vehicle height limits under bridges may also be obtained from local highway or road authorities
- Routes for vehicles with a travelling height over 16´-3˝ (4.95 metres) should be checked with the relevant highway or road authorities

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Vehicle height checks

You should ensure that drivers:

- Check the maximum height of the vehicle, its load or its equipment before commencing a journey
- Advise you if the measured height is different from the height shown on the headboard
- Check the maximum height again after loading, unloading or reloading if the trailer suspension characteristics could change the height of the vehicle
- Display the correct height in the cab at the start of every journey and following any change in the load
- Are aware that at arch bridges the signed height is only available through part of the bridge and vehicle width must to be considered

Checking the height of a trailer using a telescopic measuring device

Vehicle height recorded on the trailer headboard

- Give special consideration to wide loads over 3m at arch bridges, as the maximum height available will be less than the signed height limit

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

The roadworthiness checklist provided to the driver should include:

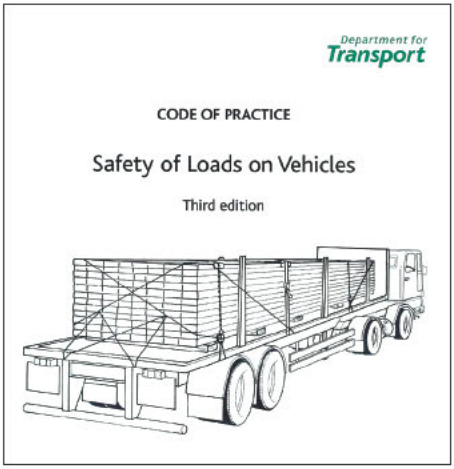
- The maximum height of the vehicle
- Confirmation that the vehicle height is correctly displayed in the driving cab

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.

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.

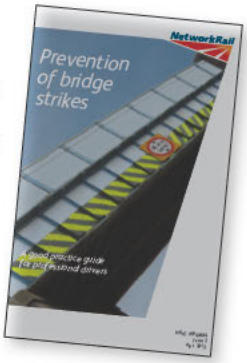
All equipment fixed to or carried on the vehicle must be secured and transported in accordance with the Code of Practice.

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

Result of tipper vehicle equipment not correctly loaded striking a bridge

Actions to prevent bridge strikes during the journey

- All drivers in your company should be provided with a copy of 'Prevention of bridge strikes - a good practice guide for professional drivers', and briefed on the contents



- Ideally 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
  - it is an endorseable offence to use a hand-held phone or similar device whilst driving
  - communication should only take place when the driver has stopped
- 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, your driver should report the bridge strike:

- Immediately to the Rail Authority using the telephone number on the identification plate at the bridge
- Then report the bridge strike to the police using the 999 system, and
- Advise you of the strike

For any other bridge, the bridge strike should be reported to the police 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.

Example identification plate at a Network Rail bridge

What are the consequences of bridge strikes for vehicle operators?

Striking bridges is potentially dangerous and expensive.

Dangerous because:

- The lorry driver could be killed or suffer physical or psychological injury
- The safety of trains and the travelling public is put at risk
- Bridge strikes can also be fatal to, or injure other road users
- The public might be put at significant risk if the vehicle involved is carrying hazardous loads such as flammable liquids or toxic substances

Expensive because:

- Your company will be liable for costs due to the bridge strike including:
  - An examination of the bridge
  - An inspection of road infrastructure
  - Repair of damage to the bridge
  - Repair of road surfacing and/ or replacement of any damaged traffic signs

Crushed cab of a skip lorry following a bridge strike

- Vehicle and load recovery
- Train delays which depending on location and length of disruption could exceed all other costs

- Your company will be liable for the damage to your vehicle, and other road users' vehicles and any damage to the 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 or direct compensation claims
- 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

Damaged vehicle and load following a bridge strike

Police arranging recovery of a lorry wedged under a railway bridge

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

Bridge dislodged from abutments onto the vehicle which struck it

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.

Training programmes for drivers and other staff, including driver certificate of professional competence periodic training, and safety briefings should include the prevention of bridge strikes.

Appendix 1

Professional drivers' route and vehicle check

Date		**Driver's name**	
Vehicle no.		**Trailer fleet / Serial no.**	
Route	From	To	Via
Load type	☐ Box	☐ Container	☐ Curtainsider
	☐ Plant & Machinery	☐ Skip	☐ Waste
	☐ Car transporter	☐ Other (specify):	

Route and vehicle check	
Have low bridges on your route been identified?	☐ Yes ☐ No
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?	..... ft ..... ins ..... metres
Is the load and equipment properly secured and safe?	☐ Yes ☐ N
What is the maximum travelling height of your vehicle?	..... ft ..... ins ..... metres
Is the maximum height of your vehicle less than the limit on vehicle height under bridges on your route?	☐ Yes ☐ N
What is the maximum width of your vehicle?	..... ft ..... ins ..... metres

Know your vehicle height and width.
Know your route. Obey 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