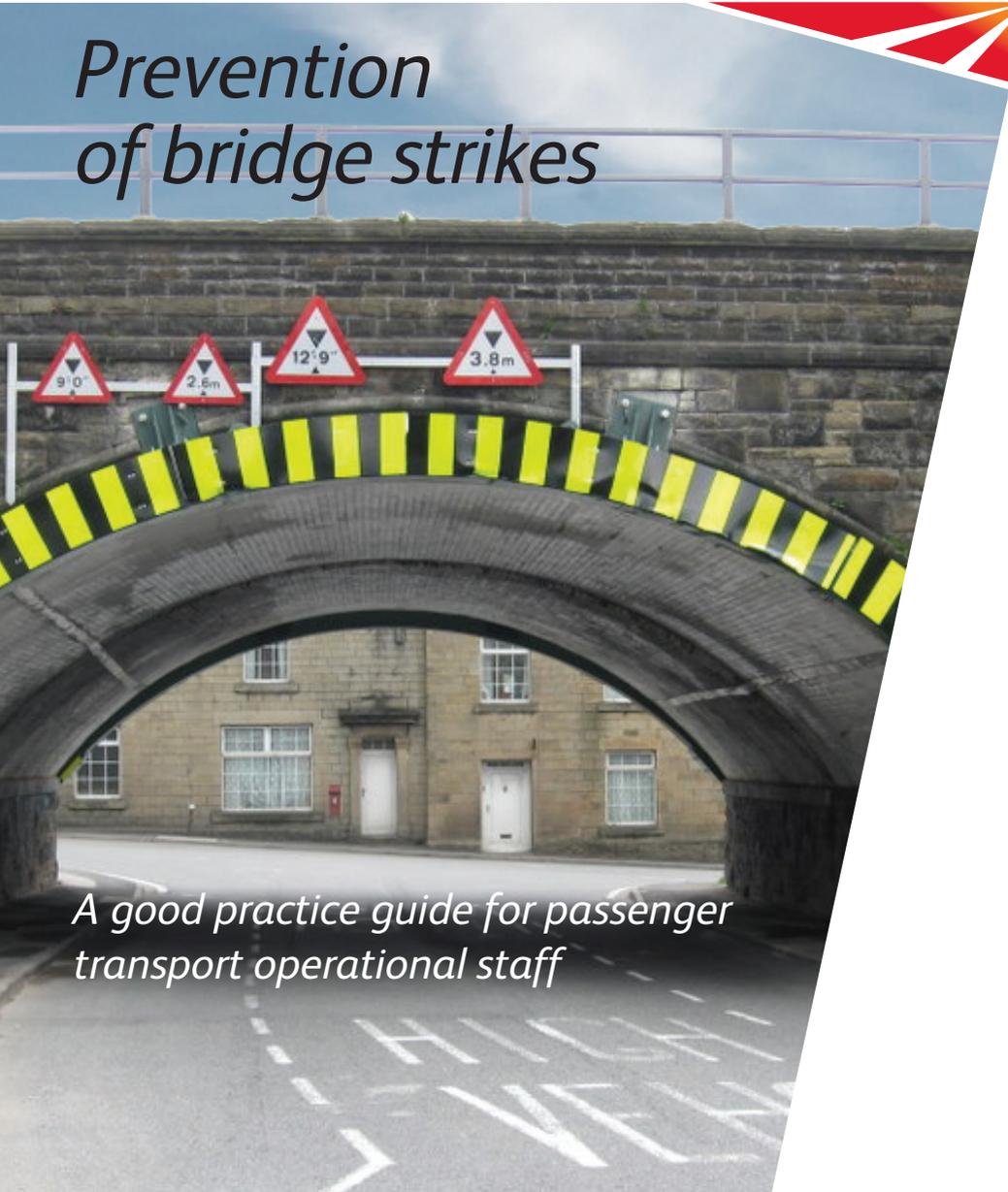


# Prevention of bridge strikes



*A good practice guide for passenger  
transport operational staff*



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# Foreword

Bridge strikes, where vehicles 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, passengers 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 tools providing route information 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 passenger transport industry have produced good practice guides that will help passenger transport operational staff and their drivers to avoid low bridges.

I commend this booklet to all operational staff. 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. A similar updated guide which includes advice on traffic signs is available for professional passenger vehicle 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

In the 10 years to March 2012 there were more than 600 bridge strikes involving passenger transport vehicles reported to Rail Authorities.

The causes of bridge strikes involving passenger transport vehicles include:

- Drivers going off line of route, including under diversion
- Drivers operating 'not in service', and taking a short cut
- Staff with insufficient route knowledge returning a vehicle to the depot for maintenance
- Drivers who normally drive a single deck vehicle taking a double deck vehicle on a single deck route

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 operational staff and others involved in route risk assessment and schedules for passenger vehicles:

- On normal service and diversionary routes
- Providing school and community transport
- On private hire including rail replacement
- Being recovered or on engineering test
- When out of service



*A bridge strike involving a rail replacement bus*



*The result of a bus being driven off route*

This guide has been produced by organisations representing the passenger transport industry in conjunction with Network Rail.

The following organisations have been involved:

- Department for Transport
- Transport for London
- Confederation of Passenger Transport
- Road Operators' Safety Council
- Association of Chief Police Officers
- Association of Chief Police Officers in Scotland

## What is a bridge strike?

A bridge strike is an incident in which a vehicle collides with a bridge, usually a railway bridge.

Railway bridge strikes involving passenger transport vehicles have the potential to cause:

- Loss of life or injury to the vehicle driver, passengers and other members of the public
- Traffic delays and congestion
- Train delays

# What is the law?

The Road Vehicles (Construction and Use) Regulations 1986 No. SI 1078 as amended requires passenger transport vehicles having a travelling height of 9ft 10ins (3.0 metres) or above to have a notice in the cab displaying the maximum height of the vehicle.

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

It is the operations manager's responsibility to ensure that a procedure is in place for drivers to check that the correct maximum height is displayed in their cabs.

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



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

## 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 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 take before the journey to prevent bridge strikes

## Route risk assessment

- Assess the risk of bridge strikes based on the height and width of the vehicle
- Select routes to eliminate the risk of bridge strikes
- Assess routes for vehicles under maintenance or engineering test to avoid bridge strikes
- Schedules should not cause the driver pressure, stress or fatigue as this may increase the risk of bridge strikes

Guidance is available from:

- Atlases can be a valuable source of information for vehicle heights limits under bridges



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- Satellite navigation systems - information on vehicle heights limits should be included
- CentreComm (London only)
- Local highway or road authorities - guidance may be obtained on vehicle heights limits under bridges

## Vehicle height checks

The first use check should include:

- The vehicle height
- That the vehicle height is correctly displayed in the driving cab

Operations managers should ensure that a procedure is in place:

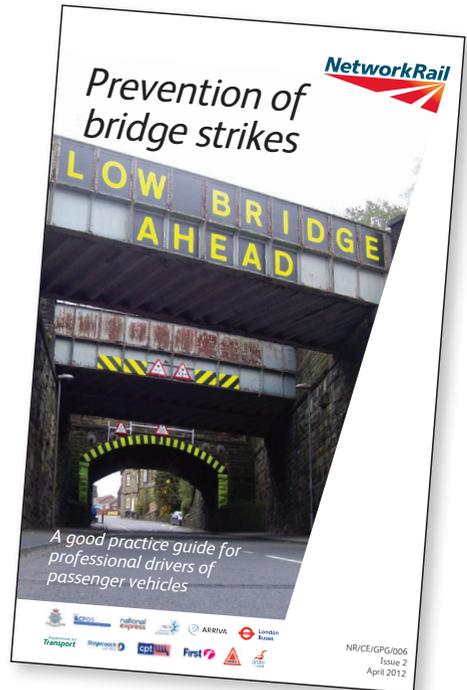
- For the display of the maximum vehicle height in the cab to be included in the first use check
- For drivers to be advised of the height of the vehicle
- To remind drivers that at arch bridges the signed clearance is only provided through part of the bridge and that they must be aware of the vehicle width

## 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 of passenger vehicles', and briefed on the contents
- When advised of road closures or diversions, ensure that drivers are provided with guidance and assistance on alternative routes or actions to be taken to avoid low bridges
- Ensure that drivers seek advice when unplanned or emerging situations from road closures or diversions etc. occur
- Drivers should seek guidance from your company of emerging situations as they arise
- Ideally two-way communication should exist between the operations staff and the driver

Remember that:

- A driver must maintain proper control of their vehicle at all times
- It is an offence for a driver to use a hand held mobile phone or similar device while driving



## What actions 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 on the bridge
- Then report the bridge strike to the police using the 999 system, and
- Implement your company accident procedures

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 for passenger vehicle operators?

Striking bridges is potentially dangerous and expensive

Dangerous because:

- The bus or coach driver could be killed or suffer physical or psychological injury
- Passengers could be killed or seriously injured
- The safety of trains and the travelling public is put at risk
- Bridge strikes can also be fatal to, or injure other road users



*Passengers on the upper level of a bus are at particular risk of injury*



*Recovery of a damaged bus following a bridge strike*

Expensive because:

- Your company will be liable for costs due to the bridge strike including:
  - an examination of the bridge
  - repair of damage to the bridge
  - an inspection of road infrastructure
  - repair of road surfacing and/ or replacement of any damaged traffic signs
  - vehicle 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 personal injury claims
- 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.



*A police officer taking evidential photographs to record the damage caused in a bridge strike*

## *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

## *Training and competence*

A passenger 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.

## Overall travelling height conversion chart



Feet / inches	Metres	Feet / inches	Metres
16'-3"	4.95	13'-3"	4.04
16'-0"	4.88	13'-0"	3.96
15'-9"	4.80	12'-9"	3.89
15'-6"	4.72	12'-6"	3.81
15'-3"	4.65	12'-3"	3.73
15'-0"	4.57	12'-0"	3.66
14'-9"	4.50	11'-9"	3.58
14'-6"	4.42	11'-6"	3.51
14'-3"	4.35	11'-3"	3.43
14'-0"	4.27	11'-0"	3.35
13'-9"	4.19	10'-0"	3.05
13'-6"	4.11	9'-0"	2.75