



Bridge strikes & prevention

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CheckedSafe

TCS22

Transport
Compliance
Seminar

A stylized graphic of a rail track, consisting of a series of vertical bars connected by horizontal lines, rendered in a dark blue color.

An Introduction to Bridge Strikes

A stylized graphic of a rail track, consisting of a series of vertical bars connected by horizontal lines, rendered in a dark blue color.



Lets Start with a Definition

- **A Bridge Strike is defined as:**
An incident in which a road vehicle or its load, or a waterborne vessel or its load, impacts with the fabric of a Bridge.
- This could be a bridge over, under to the side of the operational railway.





What happens
following a bridge
strike?





Typical chain of events

Bridge Strike occurs.

Bridge Strike reported to Network Rail Control Centre by the Driver, member of the Public etc.

Control contact Signaller who implements Operating Instructions and

Control arranges for bridge examination.

Control advises Highway Authority and Emergency Services as required.



EXAMPLE ONLY



VTB2 Bridge 84 Brighton Road (A237) – Headroom 15' 3"
Location: Coulsdon, Surrey
Route: Sussex
Region: Southern



Incident Date: 5 August 2022
Time reported: 14:32, 5 August 2022
Normal Working Resumed: 20:59, 5 August 2022
Bridge Classification: Red
Delay Minutes: 4976
Cancellations: 436
Total Delay + Cancellation Cost: £857,211.31





Network Rail Bridge Strike Headlines

- Typically there are 1800 (ish) strikes a year on our network.
- Average of 5 strikes per day nationally.
- Maximum of 14 strikes in any one day.
- In the year 2019/2020 there were a total of 1716 strikes
 - 116 Over Line Bridges
 - 1600 Underline Bridges
- Bridge Strikes costs the Rail industry circa £20m per year in train delays and bridge repairs. Network Rail aims to recover cost through the vehicles insurers.
- Other bridge owners, e.g. Highways England, Canals and Rivers Trust, Heritage Railways etc. also have strikes although the numbers are typically in low tens rather than the 1000's





Typical chain of events - continued

- In complex cases the BSE may defer the decision to re-open the line to the On Call Structures Engineer.



Arrival of the
BSE

- What happens next depends on the severity of the incident and trains signalled accordingly.
- This may include either temporary and or permanent works.

- Incident reports are produced by both the BSN and BSE.
- In addition the BSE produces an Bridge Examination Report.
- Where there is sufficient information / evidence available Network Rail seeks to claim back 100% of all costs through the vehicle insurers. This includes: Train delays, cancellations, repairs to the bridge and Network Rail costs.



BSE
Examines
the Bridge.



Temporary
Repairs carried out

Coldhams Lane, Cambridge, September
2020

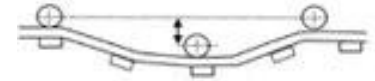
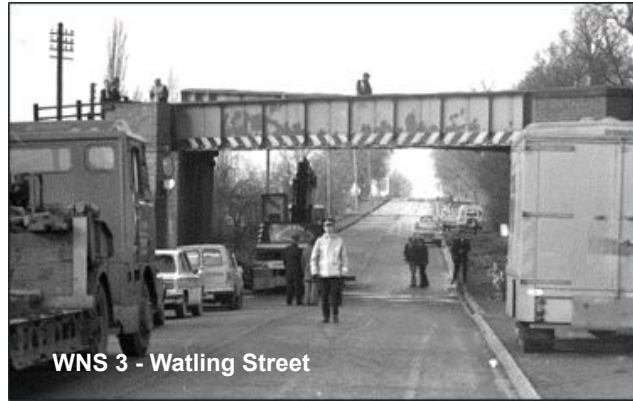


Lipson Vale, August
2021

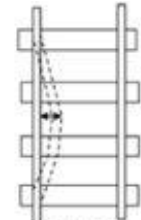
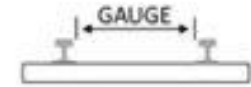


Derailment risk for trains

OFFICIAL



VERTICAL ALIGNMENT



ALIGNMENT



CANT



Overtaken Vehicles at Skew Bridges

- There is a high possibility that if a vehicle hits a skew underbridge it will overturn





Double decker Bus Strikes Injuries / Fatalities

- Unfortunately there is a history of fatalities linked to Double decker Bus Strikes
- In this incident in Swansea on the 12th December 2019, 8 People were injured and one unfortunately died.



A woman who was injured after a bus hit a railway bridge has died.





Double Decker Busses are a particular issue..

- More than 400 Bus / Coach Strikes Nationally since January 2010.
- Up to 50 Bus Strikes per year





Clogh Bridge Near Gorey, Ireland. Also known as Cain Bridge (1975)

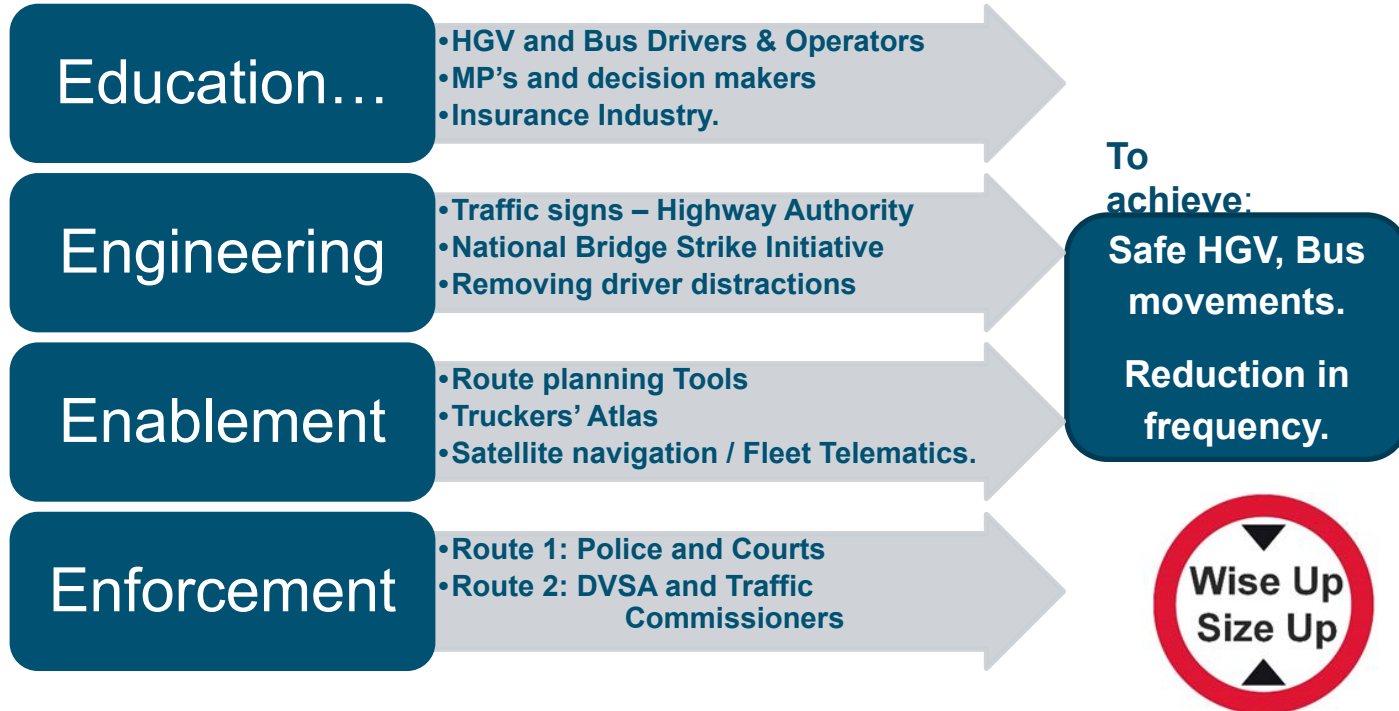
- The worst known incident affecting rail passengers in the UK and Ireland occurred on the 31st December 1975. A train travelling from Rosslare to Dublin in Southern Ireland derailed.
- Unfortunately 5 people died and 43 passengers / Railway Staff were injured.
- The accident was caused by a tractor carrying a digger on a low-loader accidentally collided with the bridge.





Network Rail - The Four E's Initiative.

- In 2017 Network Rail what is known as The Four E's Initiative. The aim to reduce the frequency of strikes by Changing behaviours of Coach, Bus and Freight Logistics Drivers & Operators through:



Engineering

OFFICIAL

Working with highway authorities to reduce likelihood of strikes.



- Road traffic signs and markings
 - interactive signing
 - advance warning signs
 - vehicle able to turn around
- Traffic management
 - single lane
 - traffic lights
- Increasing awareness
 - Removal of adverts
 - Improve visibility
 - Highlight soffit
 - Removal of vegetation
 - Install collision protection beams
- Increase headroom
 - Lower the road
 - Lift the bridge
- Close the road

Education – substantial guidance available

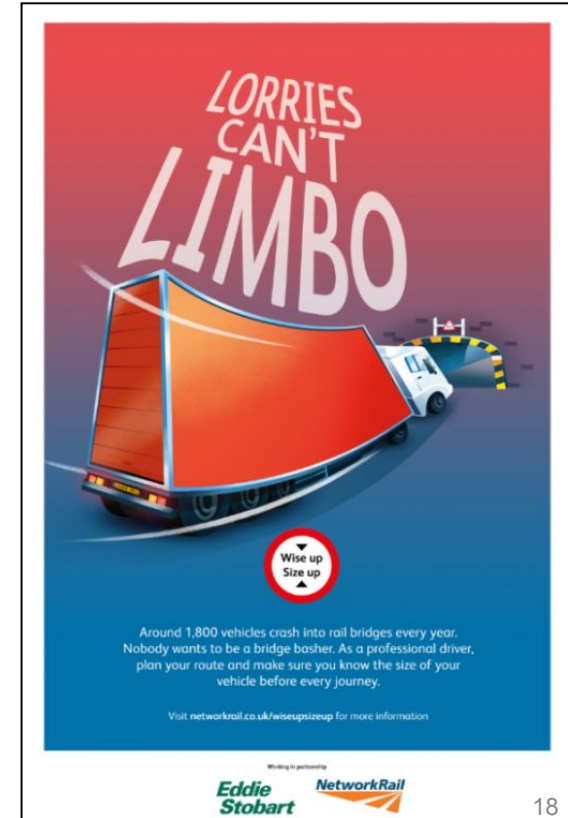
- Available through the GOV.UK Web site.
- Also the Network Rail Web site. Search Bridge Strikes.



Key ring (85x55mm) Front



Key ring (85x55mm) Back



Engaging with authorities and other external parties in activities that support prevention

Authorities:

- competence and training
- standardisation
- formal guidance
- enforcement – police
- enforcement – DVSA/TCs
- public consultations

External parties

- Insurance industry
- fleet telematics
- route planning – maps, data
- Research & development
- Associations / trade bodies




Office of the
Traffic Commissioner



BRITISH
TRANSPORT
POLICE

Enablement





00:50

(05:00)

Cab Controls

Pass ☐ Fail ☐

Height Indicator

Present ☐ Missing ☐ Not Needed ☒

Heating Ventilation

Pass ☐ Fail ☐

Seats/Seat Belts

Pass ☐ Fail ☐

Horn

Pass ☐ Fail ☐

Dashboard Warning Lights/Engine Management light

Pass ☐ Fail ☐ NA ☒

Previous

Next



Questions?

