

CROSS Safety Report

Incomplete assessment of highway bridge raises questions

This month's report concerns an unresolved highway bridge inspection assessment with the Expert Panel urging dialogue with Network Rail's asset manager.

Reporter's submission

The Institution of Civil Engineer's *State of the Nation* report 2025 (www.ice.org.uk/about-us/our-organisation/vision-and-purpose/state-of-the-nation) and its references to existing bridges prompted the reporter to get in touch with CROSS. They are uncertain if there is a problem with an existing bridge because several actions recommended in an inspection have not yet been closed out.

A local authority is responsible for a highway carried over a Network Rail bridge. The local authority is looking to increase capacity and replace the existing structure. To do this, they need to develop a business case and require information on the lifespan of the existing bridge structure, which is formed from trusses.

The structure is managed by Network Rail, so the reporter's organisation obtained the last principal inspection and other historical documents related to the bridge.

The last inspection report, from some two years earlier, noted areas that were not inspected due to obstacles such as detritus and sharps (needles, blades and/or syringes) affecting access to the lower truss. The report required further action within 12 months, including investigating 80% of the lower boom and its connections. The report also



THERE ARE NETWORK RAIL STANDARDS FOR THE ASSET MANAGEMENT OF BRIDGES INCLUDING THOSE CARRYING ROADS OVER THE RAILWAY

Key learning outcomes

For those seeking information from Network Rail:

→| For a particular structure, Network Rail has its Asset Protection and Optimisation teams (ASPRO) who can offer guidance

For infrastructure owners:

→| A regime of regular inspection by a suitably qualified and experienced person will prevent expensive repair works before issues become critical

recommended inspection of repairs to the main girders and cross girders in two of the spans, especially at the connections and bearing zones. There is ambiguity regarding the urgency, as some areas remain uninspected and, to the best of the reporter's knowledge, no further works have been carried out. In short, the principal inspection identified a series of actions that do not appear to have been undertaken or addressed. The next detailed examination is due in two years and is intended to be carried out using tactile inspection. Network Rail has advised that the bottom chord defects will be quantified at that time.

The latest version of the Network Rail document on *Structures assessment and inspection*, published in 2024, notes that for these types of structures, corrosion in the bottom chord area of the truss is a risk, particularly at the connections. Since this structure carries a highway, the risk is further elevated due to winter salting.

The reporter raises the issue of incomplete inspection as this may be a common problem.

The full CROSS Safety Report, including links to guidance mentioned, is available on the CROSS website (report ID: 1417) at www.cross-safety.org/uk/safety-information/cross-safety-report/1417.

Expert Panel comments

Full access (within touching distance for a tactile inspection, as required by a principal inspection) is expensive to provide, especially over a live railway where possessions may be needed.

It is unreasonable to expect a prediction of residual life without a detailed investigation (and possibly some maintenance intervention to limit further deterioration). For this bridge, it seems there are known issues to which focused effort could be applied to deal with the short horizon issue of time until replacement. The fact that the inspection to date is incomplete raises concerns that there may be further issues that need attention and to date have not been identified.

The intelligent use of resources is needed to inspect the UK's stock of highway bridges and provide assurance on condition. Recently drones have been used to give an indication of general condition and indicate where expensive access could be used to the greatest effect.

There are Network Rail standards for the asset management of bridges including those carrying roads over the railway. It is not clear whether the reporter is questioning the validity of the asset management records of the bridge, and if so whether the Network Rail's asset management of the bridge is compliant or otherwise. Three such standards are referenced below and available from Network Rail upon registration:

- | *Structures Examination Guidance for Asset Engineers and Examining Engineers*
- | *Structures, Tunnels and Operational Property Examinations Manual*
- | *The Management of Structures Manual*

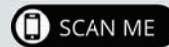
The local authority (or the reporter on their behalf) should contact the Network Rail asset manager for the bridge so that the nature of examinations (and any assessments) can be properly established. Alternatively, where there are interfaces between structures and the railway, the Panel suggest that initial contact could be made with Network Rail's Asset Protection and Optimisation (ASPRO) teams.

CROSS Safety Report: *Severe signs of deterioration in bearings on a major bridge* (www.cross-safety.org/uk/safety-information/cross-safety-report/severe-signs-deterioration-bearings-major-1480) references further examples of infrastructure deterioration and inadequate inspection.

What is CROSS?

Collaborative Reporting for Safer Structures (CROSS) helps professionals to make structures safer by publishing safety information based on the reports it receives and information in the public domain.

CROSS operates internationally in the UK, US, and Australasia. All regions cover structural safety, while CROSS-UK also covers fire safety.



How reporting to CROSS works

The secure and confidential safety reporting system allows professionals to share their experiences to help others.

Professionals can submit reports on safety issues related to buildings and other structures in the built environment. Reports typically relate to concerns, near misses or incidents. Find out more, including how to submit a safety report, at <https://bit.ly/cross-safety>. Your report will make a difference.

The Drawing Board TheStructuralEngineer

Enter a sketch in the next competition – deadline 1 August 2026

The Drawing Board is *The Structural Engineer's* quarterly sketching competition, judged by Ron Slade FStructE of WSP.

Sketches must be:

- hand drawn (no CAD, except for 'guided free-hand')
- from a real project or assignment
- at a suitable scale for publication (i.e. not too intricate/detailed).

Please also submit a short description (150 words) to put the sketch into context.

To take part, submit your entries to: tse@istructe.org

Each published entry will receive a free single e-book from the Institution's current list of titles.

Background sketch by Kevin Lyons (Lyons O'Neill)