

Press release: Report 17/2017: Partial collapse of a wall onto open railway lines, Liverpool

Summary

At about 17:38 hrs on Tuesday 28 February 2017, part of a wall at the top of a cutting 20 metres above the four track railway line between Liverpool Lime Street and Edge Hill stations, collapsed. Around 170 tonnes of masonry and other debris fell into the cutting in at least two separate falls, the last of which occurred at 18:02 hrs.

No trains were struck by the falling debris and there were no injuries. The overhead wires on some of the tracks were brought down and all lines were blocked by the debris. This led to severe disruption of train services. The lines were closed until 8 March 2017, during which time repairs were made to the wall, the overhead electrical supply system and the track.

The investigation found that there had been developments on the leased property adjacent to the cutting, which included the addition of a soil embankment immediately behind the top of the wall. A small portion of the developed land was owned by Network Rail and was not part of the leased property. The increase in ground level caused the wall to be subjected to higher loading. Heavy rainfall may also have played a role in triggering the collapse. Information recorded by Network Rail during its routine examinations was insufficient to detect the developments on adjacent land and the infringement of its property. The investigation also found that Network Rail did not have a suitable risk prioritisation process in place for retaining walls, such as the one that collapsed, that have a high potential safety consequence in the event of a failure.

Recommendations

The RAIB has made two recommendations to Network Rail. The first relates to being aware of those of its walls which have a potentially high safety consequence in the event of failure. The second is for Network Rail to review its assessment procedures for such walls, the use of open source data to identify changes in land use, and the provision of information on property boundaries to structures examiners.

Simon French, Chief Inspector of Rail Accidents said:

The collapse of the cutting wall on this busy line just outside Liverpool Lime Street occurred without warning, and about 170 tonnes of rubble fell on the railway. It had the potential to crush or derail a passing train, with disastrous consequences.

However, the signs that a dangerous situation was developing had

been there for a long time. Network Rail's examination system did not pick up the significant changes that were taking place behind the wall due to earth moving activities undertaken by the occupier. Similar changes in land use can occur anywhere, especially in areas of urban regeneration. Although I recognise that it can be challenging for the railway industry, it is vital that Network Rail carries out regular and effective checks for activities on its boundaries that may endanger the integrity of its structures. Changes in technology mean that tools, such as aerial surveys, to improve the way in which such information is gathered and analysed, are now readily available.

RAIB has made recommendations for the railway industry to put in place systems that will reliably detect threats to high risk structures, and cause prompt and appropriate action to be taken, to avoid a danger to the line. I hope that this investigation will result in a significant change to the way that the railway manages risk from its neighbours.

Animation

This video is a 3D model created from aerial images captured on the day following the wall collapse:

[3D model of wall collapse close to Liverpool Lime Street station](#)

Notes to editors

1. The sole purpose of RAIB investigations is to prevent future accidents and incidents and improve railway safety. RAIB does not establish blame, liability or carry out prosecutions.
2. RAIB operates, as far as possible, in an open and transparent manner. While our investigations are completely independent of the railway industry, we do maintain close liaison with railway companies and if we discover matters that may affect the safety of the railway, we make sure that information about them is circulated to the right people as soon as possible, and certainly long before publication of our final report.
3. For media enquiries, please call 01932 440015.

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