

Safety Bulletin

A serious incident has taken place

Scour of bridge pier

Issued to: All Network Rail line managers and RISQS registered contractors

Ref: NRB 16/01

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Location: Lamington Viaduct, South Lanarkshire, Scotland

Contact: [Simon Constable](#), Head of Route Safety, Health and Environment, Scotland Route



Overview

At 07:35 on 31 December 2015 a train reported a dip in the track at Lamington Viaduct on the West Coast Main Line between Carstairs and Lockerbie.

The line was examined by the next train, at caution, with nothing noticed amiss by the driver. Subsequent trains continued to be cautioned pending arrival of staff.

After examining the line, staff identified two small dips but considered the track fit for linespeed (100 mph). After observing a train travelling at linespeed a 10 mph ESR was imposed. The line was blocked shortly afterwards when the extent of the damage to the bridge became more obvious.

Subsequent examination of the central pier highlighted a missing 0.5 tonne sandstone block at the waterline with an approximately 2m vertical crack in the pier.

The River Clyde, which is crossed by Lamington Viaduct, had experienced exceptional river levels following the impact of Storm Frank over the previous 48 hours.

The viaduct is of mixed construction: an original masonry pier, with a concrete extension added in the 1930s and a modern superstructure installed in 2000.

Following a detailed diver survey the pier was found to have been undermined over a length of 21m. The bottom seven courses of masonry had been scoured from the masonry section of the pier to a depth of 1.8m and a 1m deep void had occurred under the concrete section up to the full width of the pier. Surveys showed that the track had dropped by up to 150mm.

Discussion Points

While we are investigating the causes of this incident please discuss the following with your teams:

- Are you aware of what things to look for which might be a sign of scour at a bridge?
- If you see any signs of, or suspect scour, what should you do?
- If you were investigating a report of a track geometry fault in the vicinity of a bridge, would you consider that it may be a sign of distress in the structure?
- Are your teams familiar with their responsibilities with respect to the production of, and actions under, the Adverse and Extreme Weather Plans?

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