

Press release: Report 15/2017: Serious irregularity at Cardiff East Junction

Summary

Over the Christmas and New Year period from 24 December 2016 to 2 January 2017, Network Rail carried out extensive resignalling and track remodelling work in and around Cardiff Central station. This was the final stage of the Cardiff area signalling renewal scheme, a project which has been in progress for several years. This stage involved the closure of the power signal box at Cardiff, with control of the signalling in the area moving to the Wales Railway Operating Centre (WROC), and changes to the track layout and signalling on the east side of Cardiff Central station.

Some of the new layout was brought into use on 29 December. At 08:37 hrs on that day, the driver of a train from Cardiff Central to Treherbert, which had just left platform 7, noticed that points in the route his train was about to take were not set in the correct position, and stopped the train just before reaching them.

The points at which the train stopped were redundant in the new layout, and should have been secured in readiness for their complete removal at a later date. The project works required eight sets of points in two separate locations to be secured. In the event only six of the eight points were secured, and the line was re-opened to traffic without the omission having been identified by the testing team through the normal checking processes which should take place as part of this type of work. The two sets of points which were missed were left in a condition in which they were unsecured and not detected by the signalling system, and the points at which the train stopped were set for the diverging route. If the driver had not noticed the position of these points and stopped, the train would have been diverted on to a line which was open to traffic, on which trains can run in either direction, and on which another train passed over about three minutes after the train involved in the incident came to a stop. The new signalling system uses axle counters for train detection, and in this situation the system would not have immediately identified that the train was in the wrong place.

The points had been left in this unsafe condition because they had not been identified as requiring securing by the team securing points during the works. Furthermore, no one had checked that all the points that needed to be secured during the works over the Christmas period had been. Route proving trains, a performance and reliability tool used to ensure the system was working correctly before running passenger services, had been cancelled.

The investigation also found that a work group culture had developed between long standing members of the project team that led to insular thinking about methods of work and operational risk. This meant that team members relied on verbal communications and assurances. An underlying factor was insufficiently thorough project governance and a possible underlying factor was ineffective

fatigue management.

In this case, no-one was injured and no damage was caused by the event, and Network Rail acted quickly to secure both sets of points.

Recommendations

RAIB has identified four learning points and made three recommendations. The learning points relate to the need for testers in charge to be able to confirm that all redundant wiring and equipment has been checked; the need for each intermediate state in which the railway is to operate before completion of the scheme to have an up to date and correct signalling scheme plan reflecting the true state of the layout; the need to mitigate the effect of cancelling route proving trains at the end of commissioning works; and the need to carefully consider the value and purpose of team briefings relating to large scale works to avoid people being overloaded with superfluous information.

Three recommendations have been made, all directed to Network Rail. The first relates to the need for good project governance to ensure a project complies with guidance, procedures and processes to enable the railway to be handed back after works are completed in a safe state in order to resume operational service. The second is concerned with document management systems, and the third recommendation deals with fatigue management for people working on projects and commissioning, recognising that fatigue in the workplace needs to be managed and mitigated, not just the risk of workers suffering fatigue while travelling to and from their place of work.

Simon French, Chief Inspector of Rail Accidents said:

This alarming incident, in which a train came close to travelling down a track that would have put it on an unprotected collision course with other trains, serves as a timely reminder of how easily things can go wrong when railway infrastructure is being upgraded and renewed.

It happened very close to the end of a huge engineering project, to renew the track, signals and train control systems over a large area of south Wales. Thousands of people worked hard on that project, many of them over the Christmas and New Year period at the end of 2016, and they delivered the renewed railway on time – a great achievement. But over the years that the project had been in progress, some bad habits had crept in. Well-meaning people were taking each other's word that things had been done, instead of insisting on seeing the proof. The end result, in this case, was that no-one checked that redundant points, due to be removed altogether in a few days or weeks, had been locked in the correct position. Good project governance includes making sure that the right procedures are in place and that people follow them, at all levels, all the time. We have concluded that the project governance arrangements, and the processes that should provide Network Rail

with assurance that these are being followed, need a thorough review in the light of what happened at Cardiff.

It is also important, when organising intensive periods of commissioning work, to properly manage the working hours of the people doing the job. Back in 1988, the disastrous collision at Clapham Junction happened in part because working for weeks on end without any days off was part of the culture in some areas of the railway. Rightly, things have changed a lot since then. However, the events at Cardiff showed how easy it is to forget the lessons of Clapham and slip back into those habits under the time pressures of a big commissioning.

RAIB is now investigating the collision at Waterloo on 15 August this year, which also took place during the commissioning stage of a large and high-profile project involving track and signalling changes. We will again be looking closely at how such projects are managed, and whether the lessons learned from the tragedies of the past are still being applied effectively on today's railway.

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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