

John Larkinson
Chief Executive



Chris Heaton-Harris MP
Minister of State for Transport
Department for Transport
Great Minster House
33 Horseferry Road
London
SW1P 4DR

7 June 2021

Dear Chris

Learning the lessons: ORR review of Hitachi train cracking

When we spoke during the early stages of the Hitachi class 800s cracking issues, we agreed it was important to learn the lessons from what had happened.

I am writing to let you know the ORR is undertaking a wide ranging lessons learned review, covering both the safety and passenger impacts – the terms of reference are attached to this letter (we have set the remit to include other Hitachi trains, not just the 800s). The bulk of the work will be on the complex safety issues that have arisen and will cover: technical areas including design, manufacture and maintenance; process issues such as how all parties worked together; and contractual matters. We will aim to get at the root cause of the cracking problems.

Our plan is to publish the report on the passenger impacts by 25 June 2021. The safety work will take longer and we will publish our initial report, covering all the stages leading up to the reintroduction of trains, by 9 September. As you know, work on the long term rectification programme is still in progress, and hence we will confirm the date of our final report when the position is clearer.

We would of course be very happy to present our findings to you.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'John Larkinson', is positioned below the 'Yours sincerely' text.

John Larkinson
Chief Executive

Learning the lessons: ORR review into Hitachi AT200 & AT300 rolling stock cracking

ORR will work closely with all parties to ensure that lessons are learnt from the discovery of cracks in Hitachi AT200 (Class 385) & AT300 (Classes 800, 801 and 802) rolling stock. The review will focus mainly on safety lessons, but will also cover the impact on passengers from the withdrawal of trains from service.

Safety lessons

ORR will work with Hitachi's design and manufacturing teams and all relevant parties to:

- find the root cause of the
 - cracking in the jacking plate
 - cracking at the yaw damper bracket/anti-roll bar end of the bolster
- examine the industry processes relating to
 - identification of the problem
 - assessment of the safety risk
 - withdrawal of the trains from service
 - return of the trains to service
- identify potential improvements

The review will cover:

- The criteria for selecting the materials, the joining methods and any post-joining treatment when designing vehicles to operate for the life of the contract.
- How the design, manufacturing and testing processes addressed the potential for stress corrosion cracking and fatigue cracking in the design.
- Hitachi's processes to identify cracking in components during the life of the train.
- The background to the identification of the cracks in the bolster area, and how Hitachi managed the subsequent investigation and development of solutions.
- Whether the cracks in the jacking plates could have been found earlier.
- The immediate response; considering the roles of Hitachi, the train operating companies (TOCs), Department for Transport (DfT) and ORR.
- The communication flows within Hitachi as maintainer / builder / designer and between Hitachi and the TOCs, including whether they could be improved to speed up identification and resolution of common issues.
- Cooperation between all parties, and whether information flow or decision-making were affected by commercial, organisational, geographic or cultural factors.
- Contractual responsibilities for inspection, maintenance, repair and remedial action, and how these could be improved.
- The effectiveness of the forward recovery planning processes for returning the trains to service, for immediate rectification of defective vehicles.
- The potential for the original design and manufacturing choices to lead to development of cracks elsewhere in the train.
- The long-term management of the technical issues.

Passenger impact

ORR will work closely with TOCs and passenger groups to review the impact on passengers from the withdrawal of trains, with a specific focus on the operators of Hitachi class 800 trains – Great Western Railway, London North Eastern Railway, TransPennine

Express and Hull Trains (although the impact on the latter was more limited). The passenger review will not include ScotRail given there was minimal impact to passengers using its services.

The review will cover:

- consistency and clarity of travel information, both over the weekend of 8 May as the safety issues became apparent but also in the following week(s) including information provided by National Rail Enquiries;
- ticket refunds - information provided by train companies, National Rail Enquiries, and independent rail retailers to passengers about their refund rights and the application of administration fees;
- advice to passengers on alternative travel arrangements including ticket acceptance on other operators;
- the steps taken to contact passengers who had booked assistance to travel and the accessible alternative arrangements offered.

We will report on the passenger impact by 25 June 2021 and produce an initial report covering the history, withdrawal and reintroduction of the rolling stock by 9 September 2021. A final report will follow when the long-term rectification programme has been established.



© Crown copyright 2021

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3.

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

This publication is available at orr.gov.uk

Any enquiries regarding this publication should be sent to us at orr.gov.uk/contact-us

