

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.



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