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Press Release

End of the line for ‘leaves on the line’ now in sight

New sander arrangements proven to dramatically reduce the impact of low adhesion conditions

Delays due to leaves on the line could become a thing of the past if the rail industry adopts double variable rate sanders on trains, according to the latest research by rail safety body RSSB.

Sanders are routinely used on trains to reduce the impact of slippery rail head conditions, referred to as low adhesion. By blasting sand between the wheel and the rail, sanders improve the reliability and safety of train services.

New research by RSSB proves that changing the approach to sanding by introducing double variable rate sanders, which automatically apply more sand when braking at higher speeds, dramatically reduces braking distances.

RSSB undertook a three-month programme of track testing in collaboration with industry partners, at the Rail Innovation and Development Centre at Melton Mowbray using two new Class 387 trains loaned by Great Western Railway. A robust dataset was created from over 220 test runs covering various configurations of sanders, test speed and train length.

The results show:

- Using multiple and variable rate sanders improves braking significantly compared with the current fixed rate sander configuration. In particular, using two variable rate sanders can improve stopping distances on a 4-car train by around 50% compared to a single fixed rate sander.



- Double variable rate sanders provide assured 6%g braking performance. This is an important braking performance measure as it is the basis for timetable planning on most routes.
- Using double variable rate sanders can reduce SPADs (signal passed at danger) due to low adhesion conditions by 98% including low adhesion station overruns by 96%.

GB rail services were delayed by over 350,000 minutes due to low adhesion conditions last year, causing delays to millions of passengers and freight services. Reliable braking in low adhesion conditions could deliver a significant reduction in industry and wider societal costs associated with poor rail adhesion, which are currently valued to exceed £300M per annum.*

By improving the consistency of train braking in low adhesion conditions, double variable sanders are also a key enabler to increasing capacity.

RSSB's Mark Philips, CEO, RSSB, said:

“Passengers rightly expect trains to run on time and these results will help operators run a more reliable service regardless of weather conditions. Double variable rate sanders will help trains brake better in the autumn when leaves cause problems. Having proved the technology, and the benefits, we will now work with the industry to promote the upgrading of sanders to maximise the benefits they can deliver.”

Mark Hopwood, Managing Director, Greater Western Railway commented:

“This significant cross-industry endeavour led by RSSB found a credible solution for dramatically improving braking performance. The ground-breaking results from this testing, using two new GWR Class 387 trains, provide the rail industry with the evidence and clarity it needs to move forward in this challenging area.”

John Edgley, Chair of Adhesion Working Group, and Chief Track and Lineside Engineer, Network Rail, said:



“I welcome the successful delivery of this research which improves our understanding of how existing sanding technology can be used much more effectively to combat poor rail adhesion. This long-standing issue affects millions of passengers each year and often prevents the delivery of the efficient and reliable service they expect.”

-Ends-

Notes to Editors:

*Industry and societal costs include delay minute payments, prevention management and cleaning costs, rolling stock and infrastructure damage and safety costs.

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For more info on this story contact the RSSB press office by calling 020 3142 5653, or email pressoffice@rssb.co.uk

About RSSB

Through research, analysis, and insight RSSB supports our members and stakeholders to deliver a safer, more efficient and sustainable rail system.

Our vision is to be a centre of excellence, valued by its members and stakeholders as an essential contributor to their success.

Our independent evidence based approach is built on strong technical capability, and the enabling of collaborative industry engagement for the benefit of the whole rail system

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