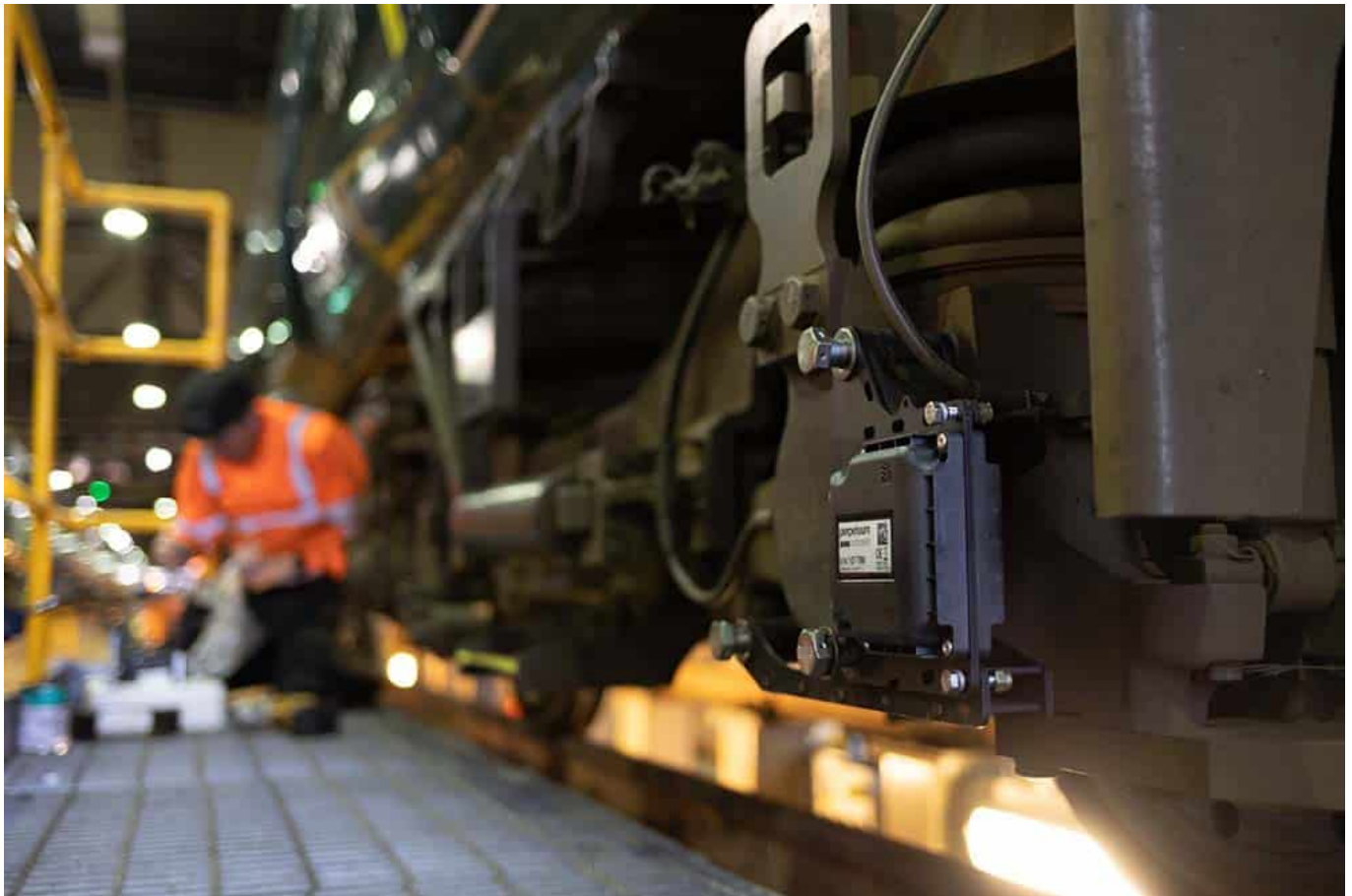


High-speed trains get live digital monitoring that Hitachi hails as a “world first”

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Hitachi Rail is installing its cutting-edge live monitoring solution across **Great Western Railway's** high-speed fleet of 93 intercity trains, in what it says is a world-first for digital maintenance. This technology will boost fleet availability by over 100 days per year.

This will be the first time Hitachi's 'Perpetuum Onboard' wireless technology will monitor the full-suite of wheelset and bogie parts on high-speed passenger trains.

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Wireless sensors are being attached to live monitor the entire wheelsets and bogies, allowing real-time data of gearboxes, traction motors, bearings and wheels. This will deliver significant benefits to passengers and train operators, including boosted train availability, improved safety, and reduced maintenance costs.

At present, bogie overhaul accounts for about a third of maintenance costs, with trains requiring an average of seven days to carry out manual inspection or component replacement in a depot.

Digital monitoring of bogies and wheelsets can replace periodic inspections, reducing bogie overhaul downtime by up to 50%. On the GWR fleet of 93 trains, this will deliver over 100 extra days of train availability every year. Across the lifetime of the fleet, this will deliver in excess of 3,100 days of train availability. This ensures trains spend more time carrying passengers, and less time in the depot.

Improved data and knowledge of critical components optimises maintenance to ensure train availability remains high as the fleet matures. Overall, this boost in train availability and usage increases reliability for passengers, while helping with additional flexibility in timetabling or fleet management.

Real time monitoring enables immediate and precise identification of parts that require either inspection or maintenance. Crucially, this work takes place before it can affect passenger service. All of this further reduces the time a train spends in a depot and increases its time on the tracks.

The ability to pinpoint faults further reduces the time required by maintenance staff to conduct their work. The additional workforce days and hours gained are re-allocated to other maintenance tasks, maximising the skills at our Hitachi depots.

Improved understanding of bogies and wheelset condition means you only replace parts when necessary. Eliminating the wasteful discarding of good-condition components – saving time and money, and improving sustainability.

The digital monitoring technology has been installed on some initial GWR units (see images), with rollout across the rest of the fleet taking place over the coming year.

The monitoring sensors also have the additional capability of **monitoring the condition of the track** and train axles. The future application of these wireless monitors' means there are future-proofed to deliver even greater value for money, and digitally integrate track and train together.

Angus Thom, Group Service and Maintenance Operations Director at Hitachi Rail said: "As the rail sector adapts to new challenges, I strongly believe that digital maintenance is a solution that benefits everyone.

"Through collaboration, and Hitachi's digital solutions, we can deliver real value for money, improve safety, and create new digital skills at our depots.

"What we are doing with GWR, Agility Trains West and Eversholt is an important step towards the UK being a pioneer in digital railways."

Simon Green, Engineering Director at GWR said: "We welcome the introduction of this wireless monitoring solution, which will help to improve the maintenance and reliability of our high-speed fleet, enabling us to deliver an even more robust timetable and higher quality journeys for the benefit of our customers.

"At GWR we are committed to reviewing emerging technologies and we look forward to working with our

partners to assist in the rollout of this digital maintenance solution.”

Paul Sutherland, Client Services Director at Eversholt Rail said: “It’s great to be working on this project with Hitachi and Great Western and see this fleet added to the list of Eversholt Rail’s fleets already fitted with Perpetuum.

“The system has a proven track record of improving safety, reliability and being an enabler for maintenance optimisation. We look forward to working with Hitachi and Great Western to realise these benefits.”

James Le Couilliard, Chief Executive Officer for Agility Trains West said: “The implementation of Hitachi’s Perpetuum Onboard equipment reflects the collaborative endeavours of Hitachi, GWR and Agility Trains to drive innovation and harness cutting-edge technology to deliver long-term passenger benefits, operational resilience and industry success.”

Perpetuum is owned by Hitachi Rail, one of the world’s leading transport system providers. Hitachi Rail has a proud history of using innovation and digitisation to create sustainable modes of transport that both safeguard our environment and make sure passengers’ journeys are enjoyable every day.

A key element to Hitachi’s focus on innovation is working to develop all aspects of passenger journeys, from start to finish, through their Smart Mobility commitment. Through digital innovation, different aspects of a person’s journey – from ticketing to train control – can be connected to better manage and optimise the whole journey. Innovative sensors are yet another example of how Hitachi Rail are developing these digital solutions to improve the quality of public transport journeys for passengers around the world.