Consulting

# Rolling Stock

## Background

The maintenance and financing of rolling stock for Britain's mainline railways is valued at £1.8bn/year (approximately 15 % of the total railway operating cost).

The passenger fleet consists of 64 classes with 12,000 vehicles and an average age of 17.3 years, but new trains are nearly always in the pipeline, such as stock for Thameslink, Crossrail and the InterCity Express Programme (IEP).

Train operators lease rolling stock from dedicated rolling stock leasing companies (ROSCOs) which form the customer base that specifies requirements from the supply chain. The rolling stock topic area is concerned with improving the performance of rail vehicles and in the context of accidents, the protection and management of people. This includes human factors issues such as design of the man/machine interface for passengers as well as train crew.

Research on environmental and performance issues is also included where relevant.

## The Challenge

Challenges affecting rolling stock include:

- improving the performance of rail vehicles and in the context of accidents, the protection and management of people.
- agreeing the right standards for industry to share concerning aspects of vehicle design, construction and maintenance associated with structures, wheels and axles, brakes, draw gear and couplings, fire resistance, derailment risk, gauge, cab design and interior environment (air quality, lighting, noise and vibration), visibility and audibility, train safety systems, doors and windows, emc issues and data recorders. There is also consideration for the arrangements for vehicle acceptance, maintenance and testing together with the supply of safety critical products and services
- managing the interfaces between rolling stock and other performance-critical areas such as infrastructure, control, command and signalling, structures and energy
- creating the right strategies to improve the way rolling stock works as a whole in relation to the whole rail system and where trains can contribute to a railway costing less money and carbon but performing with higher capacity and better customer satisfaction.

## How We Can Help

We can help you through:

- sharing cross-industry research and development specifically on rolling stock matters
- strategy building through the Technical Strategy Leadership Group (TSLG) (included rolling stock)
- delivering standards – technical expertise on rolling stock matters.

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*For more information please visit www.networkrailconsulting.com*

## Research into trains with lower mass in Britain

This project evaluated the benefit of reducing the mass of trains in monetary terms. The idea was to support people specifying new rolling stock by providing values which they could use to weigh up the benefits of trains with lower mass.

Lighter trains use less energy and incur less wear and tear on the track, so lead to reduced energy and infrastructure maintenance costs. Before this research there was no consensus on how to quantify this benefit.

The work considered the effect of a series of weight reductions from existing reference vehicles. The agreed values and resulting benefits will now enable appropriate strategic decisions to be made by the industry and regulatory bodies. The research was undertaken for the whole industry, as represented by the Vehicle/Vehicle Systems Interface Committee, and so represents an authoritative reference which specifiers can use with confidence.

## Ensuring automatic coupler reliability during ice and snow

This project – on behalf the Vehicle/Vehicle System Interface Committee (V/V SIC) and the train operating companies - compiled industry's combined experience of coupler performance in wintry weather, and advised options available and recommended solutions to existing and new-build rolling stock.

Technical, financial and pragmatic appraisals were made for each solution; and the research identified techniques, strategies and technologies that could be applied to resolve the problems. The consequences of the range of operating regimes, vehicle types, and climatic conditions found across the country that affect the suitability of a particular solution were described.

A key benefit is improving winter performance of fleets across the British rail network by reducing the likelihood of train cancellations and delays associated with coupler problems.

## Railway Industry Supplier Approval Scheme

RSSB developed this industry-owned scheme to provide for the assessment and certification of suppliers of critical products and services – initially in rolling stock.

Rail operators and suppliers can assume a high level of assurance in companies with a Railway Industry Supplier Approval Scheme (RISAS) certificate for a given product or service, based on one universally accepted, rigorous assessment. RISAS is tangible proof of capabilities in controlling the risk generated by procuring rolling stock maintenance and overhaul requirements.

Companies applying for certification are assessed by approval bodies (known as RISABs), which are in turn, accredited by RSSB.

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