

# Rail Vehicle Engineering



## Background

Network Rail is responsible for the successful delivery of £4.5bn of enhancement and renewal works to live operational infrastructure every year.

The National Supply Chain (NSC) is a corporate service within Network Rail and is responsible for all category management, procurement and national logistics. We procure safe and sustainable products and services that are used to maintain, renew and enhance the rail infrastructure. Our aim is to deliver outstanding value and exceptional service to our customers, helping the rail industry work together to deliver a more cost effective railway.

Our Technical Services Principal Engineering team provide specialist engineering support to projects and fleet contingents for the specification, procurement, renewal, enhancement, overhaul, maintenance and assurance of on-track plant, on-track machines and traction and rolling stock.

## The Challenge

Increasing stakeholder expectations means that we need to constantly strive to find innovative ways to improve our fleet.

To meet these challenges our Technical Services team use their skills and knowledge in design and structural analysis to deliver new build, enhancement and bespoke modifications to vehicles which we see on Britain's railways today.

All this needs to be done whilst ensuring that these vehicles are designed and maintained in compliance with company, national and international standards and legislation.

We are also responsible for managing the risk of the developments through the whole life cycle of the asset to help minimise the safety risk to staff and the public.

## How We Can Help

Our experienced consultants provide advice on:

- ▶ technical authority for specifications
- ▶ maintenance documents
- ▶ reports and investigations
- ▶ project management
- ▶ engineering expertise
- ▶ specialist technical knowledge
- ▶ consultancy to projects and fleet teams
- ▶ guidance on compliance, approvals and assurance
- ▶ risk management
- ▶ auditing projects
- ▶ maintenance delivery functions.



## Project Experience

We have undertaken a range of significant re-build and re-engineering projects, including:

- ▶ specification and procurement of tilting switch and crossing carrying wagons to support the Crossrail and Thameslink infrastructure projects
- ▶ overhaul and enhancement of class 97/3 locomotives including installation of GSM-R (Global System for Mobile Communications – Railway) and via the European Train Control System (ETCS) in-cab signalling
- ▶ ongoing project management of the retro-fitment of ETCS into the GB fleet of over 200 on-track machines
- ▶ installation of GSM-R radio to locomotives, multiple units and on-track machines and decommissioning of legacy radio systems
- ▶ creation of innovative snow ploughs and de-icing unit trains to remove ice and snow from conductor rail and lay heated de-icing fluid to prevent future build up
- ▶ creation of rail delivery and recovery trains to winch, lift and transport 18m jointed and 108m continuous welded rail
- ▶ overhaul and conversion of new railhead treatment trains to remove leaf contamination from the railhead using high pressure water jetting
- ▶ overhaul and enhancement of track relaying machines to eliminate working at height during recovery of track panels onto flat wagons
- ▶ ongoing maintenance management of electrification line renewals trains to ensure the delivery of cost-effective maintenance within an Entity in Charge of Maintenance (ECM) compliant assurance regime.