Balfour Beatty
Rail

Laser Rail Software

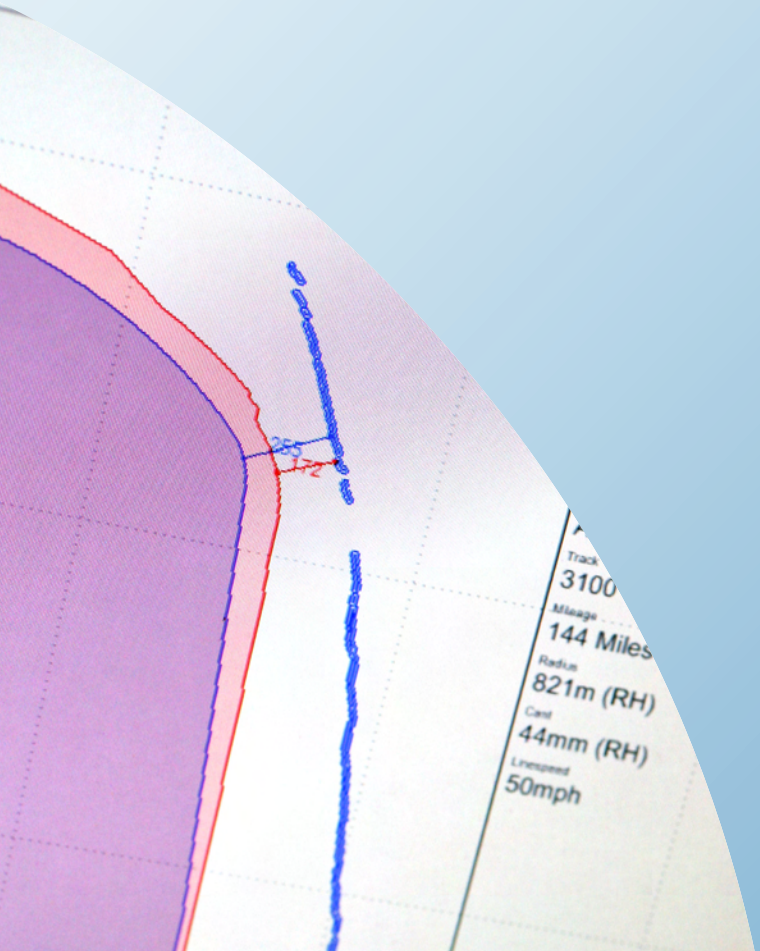
Solutions for clearance gauging and infrastructure management

The Laser Rail software suite is a

comprehensive solution

for clearance gauging and infrastructure management .....

- Supports maintenance and upgrade of rail networks
- Improves decision support and enhanced risk management
- Meets safety and regulatory requirements
- Industry proven solutions
- Turnkey service with full lifecycle support
- Packaged software and bespoke development to meet customer requirements
- Management Systems certified to BS-EN-ISO 9001:2008, TickIT and Link-Up



Laser Rail software is part of a family of products and services provided by Balfour Beatty Rail covering measurement and analysis systems, signalling, engineering support and specialist track products.

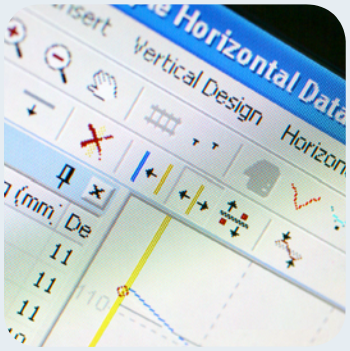
Our aim is to improve safety, prevent downtime, improve efficiency, reduce maintenance and lower lifecycle costs for rail operators and their partners.

Backed by over 20 years experience, Laser Rail leads the way in providing first class cutting edge software into the rail network.

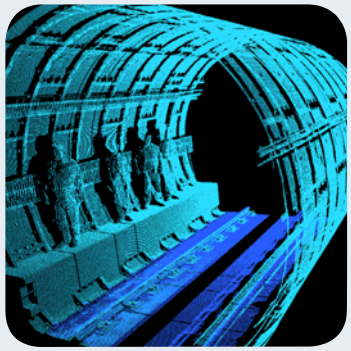
Laser Rail software provides solutions to assist with many areas including track maintenance, new track and renewal works, introduction of new rolling stock and upgrade of signalling.

Laser Rail software users include Network Rail, London Underground and many UK and International rail contractors and consultancies.

Software capabilities



Laser Rail software delivers significant benefits to organisations involved in the maintenance and upgrade of rail networks.



Robert Higgins
P.Way Design Engineer, Colas Rail Ltd

"ClearRoute has automated the complex and time consuming task of calculating clearances between rail vehicles and infrastructure via a user friendly interface.

It has enabled me to efficiently undertake accurate clearance assessments for the introduction of new rolling stock and the commissioning of remodelled track layouts.

The quality of training provided is exceptional and technical support has always been responsive and competent in answering my queries."

Track Design

DesignRoute™
Software for designing track to Network Rail standards. Easy to use, delivering fast results.

Structure Gauging

ClearRoute™
The standard automated solution for assessment & clearance calculations. ClearRoute™ supports structure gauging decisions, saves time and reduces costs.

ClearRoute OCL™
The OCL module for ClearRoute™ helps define clearance between overhead contact line equipment, pantographs and other rail infrastructure.

HyperRoute™
Delivered as a service, HyperRoute™ provides very fast, accurate, fully validated structure clearance calculations. HyperRoute™ offers significant cost and time savings for high volume gauging work.

LaserClear™
Software for the LaserSweep™ measuring system, providing on-site capability for clearance calculations.

Infrastructure Data Management and Trend Analysis

StressRoute™
Data management suite for managing all rail infrastructure stress related data. Delivering decision support and auditing benefits.

TrackRoute™
Data management suite for the administration of structure survey data. Providing a single source for accurate storage and distribution of survey data.

DataMap™
Data display and analysis tool designed to manage large volumes of data collected by rail monitoring vehicles. DataMap™ makes optimal use of available data and can play a key role in predictive maintenance regimes, helping to control maintenance costs.

ISO 9001 & TickIT REGISTERED

DesignRoute™ is an interactive and visual software package enabling track to be designed to current Network Rail standards. The system is capable of providing effective horizontal and vertical track calculations, OHLE data, track, structure diagrams, and plotting facilities.

- Easy to set up new schemes
- Produces both vertical and horizontal track designs
- Calculates all design limitations and associated constraints
- Simple process for data inputs
- Graphical and numeric outputs
- Quick and easy to use
- Vertical and horizontal software is available separately or as a combined package managed through the flexible common user interface

ClearRoute™ software is an engineering software tool used across the industry to perform a full range of gauging calculations. Its aim is to optimise the available infrastructure and provide the information necessary for designing larger rail vehicles. It is a system that has become a standard for railways in the UK.

ClearRoute™ software uses a simple x-y co-ordinate framework to define the shape of a structure. The profiles produced are stored in a database (National or user-created) that can be used as the framework for minor and major route assessment projects.

The software utilises a database of vehicle and gauge models, supplied by Balfour Beatty Rail. Users can also create their own vehicle models in ClearRoute™ format. ClearRoute™ works with all UK and many international gauging standards.

- Calculating clearances between vehicles and infrastructure
- Platform stepping analysis
- Passing clearances between vehicles
- Route optimisation and assessment
- Route opportunity studies
- Configuration flexibility
- Assisting with new track designs
- Extremely cost effective alternative to CAD approaches to gauging

ClearRoute OCL™ is the OCL module which helps define clearance between overhead contact line equipment, pantographs and other rail infrastructure.

- Model the vehicle pantograph – overhead clearance line interface
- Accurately determine and identify electrification clearances
- Determine where contact problems can be encountered
- The software will allow a user to check compliance with standards using an absolute gauging approach to electrification clearances and pantograph sway rather than a standard static gauge approach

HyperRoute™ is delivered as a service and provides very fast, accurate, fully validated structure clearance calculations. HyperRoute™ offers significant cost and time savings for high volume gauging work.

- Significantly faster than equivalently featured desktop solutions
- Latest algorithms providing enhanced accuracy of results
- Capable of extensive route based clearance calculations
- Simplified management due to central repository of data & results
- 3rd party integration with Excel & CAD packages
- Turnkey solution

LaserClear™ is an optional piece of software which works alongside LaserSweep™ to provide engineers with the capability to perform both structure profile measurements and clearance calculations on-site.

- Virtual real time structure clearance analysis
- Visual Go / No Go against gauge post renewals or maintenance work
- A range of preloaded vehicle gauges
- Clearance schedule and plotting outputs
- Forms part of the PC tablet upgrade
- Approved by Network Rail

StressRoute™ is a Rail Stress Management Database software product designed to provide railway operating and maintenance personnel with a means of recording, monitoring and managing all infrastructure stress related data within the rail network.

- Stores rail stressing/disturbance records
- Enables monitoring of critical temperatures within the structure
- Complete with standard template reports that can be adapted for use
- Provides visual tools to aid data management
- Increases traceability and security
- Unique reporting facility reduces paper usage
- Interfaces to Verse Testing records
- StressRoute™ will also prioritise sites that require stress related inspections

TrackRoute™ provides a flexible sophisticated data management suite for the administration of structure survey data. TrackRoute™ imports surveying data in a wide range of formats with data editing, survey version management and reporting facilities being provided.

Track models can be created and tailored to a specific customer, region or country's requirements. Data conversion facilities can be provided for integrating into clearance analysis software.

- Used to manage the entire UK structure & gauging measurements
- Links to various fields such as profile, location speed & geometry
- Direct output to ClearRoute™ & HyperRoute™ analysis software
- Provides survey and audit trail reports
- Configurable to support customer specific infrastructure models
- Multi-level role based security models
- Efficient data manipulation

DataMap™ is a Windows compatible visualisation and analysis tool which is used to synchronise data from various measurement or recording systems and spatially locate the information on a geographical map.

A combination of track geometry, structure gauging and video data can be synchronised and accurately located, to provide the user with detailed information pertaining to the track asset and the surrounding infrastructure at a specific position on the railway network.

- Wide range of data inputs
- Operates with user specific geographical co-ordinates
- Spatial synchronisation of all data
- Excellent run-on-run location consistency
- Trend analysis
- Statistical and exceedence reporting
- Predict and prevent (costs) analysis
- Scaleable technology

Flexible training & support

Our dedicated team provide training at our Software Training Centre or at your chosen location

- Courses to suit individual needs
- Off site and on site training available
- Full certification issued to all attendees
- Full manual support
- Full technical support
- Refresher courses available

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