

Rail Engineering Operative

Occupational Profile: Rail Engineering Operatives provide support to Rail Technicians and Engineers. The engineering disciplines cover the following areas of “The Railway” (infrastructure and trains); track (including minor works), electrification, overhead line, signalling, telecommunications and traction & rolling stock. Apprentices will undertake the core learning and also specialise in one particular discipline.

Those working within the occupation of Rail Engineering are responsible for the safe construction, installation, maintenance and renewal of The Railway to provide a safe and reliable Railway for customers. The Rail Industry has a high level of safety critical work activities requiring a disciplined and responsible approach.

Job titles include: Track Operative, Overhead Line Operative, Electrification Operative, Traction & Rolling Stock Operative, Signalling Operative, and Telecoms Operative.

A Rail Engineering Operative may work on site or in a depot or in a technical office. Their work could involve:

- Assisting in the construction, installation, renewal, enhancement and modification of The Railway.
- Assisting with fault finding and diagnosis to prevent or address equipment failures.
- Maintenance and replacement of components.
- Assisting in functional and operational testing and inspection of The Railway using specialist equipment.

For those Rail Engineering Operatives who have the ability and drive there is a wide range of further development and career progression opportunities within Rail Engineering.

Individual employers will set the selection criteria for their Apprenticeships. Employers who recruit candidates without English or Maths at Grade C or above must ensure that the candidate achieves a level 1 English and Maths and take the test for level 2 prior to the completion of the Apprenticeship.

Core Knowledge. Within a Rail context all Rail Engineering Operatives need to know about:

Safe and Professional working practices including legislation, regulation, industry procedures and safety requirements.

The general engineering techniques required to support the maintenance, renewal and construction of the rail infrastructure and trains, including track, electrification equipment, overhead line, signalling, telecommunications and traction & rolling stock.

How to work effectively and contribute to engineering solutions including awareness of the importance of 3rd party requirement and the need to understand and adhere to corporate policies on ethics, equality and diversity.

Awareness of commercial principles applicable to The Railway, and the implications of these.

Core Skills. Within a Rail context all Rail Engineering Operatives need to be able to:

Keep themselves and others safe by adhering to safe working practices. Understand and comply with statutory regulations and organisational safety requirements, including safe access to railway work locations.

Prepare for a high standard of technical work: Gathering and interpreting information including drawings, plans and schedules needed for rail engineering activities and prepare the railway site / work location (depot / siding).

Deliver a high standard of technical work: Undertake rail engineering activities in relation to maintenance, construction / installation and or renewal of assets. Take responsibility for their own work on completing relevant integrity and compliance checks. Reinstatement the railway site / work location / asset after engineering activity.

Identify and report problems: Identify, recognise and escalate appropriately common problems.

Use resources including the correct utilisation and storage of small plant, tools, materials and equipment, and the lifting and moving of materials, components and equipment.

Communicate effectively. Use oral, written, electronic and IT based methods and systems for the accurate communication and reporting & recording of technical and other information, using correct terms, standards, templates and certifications.

Specific Knowledge & Skills. In addition, for the discipline they are following, Operatives will have the following specific knowledge and skills regarding different techniques and methods used to construct, install, maintain and renew The Railway.

Track. Understand the relevant tolerances for track installation, specific methods and techniques for track inspection, maintenance and replacement, what constitutes a track defect or variation, track work instructions, hot weather restrictions and extreme weather plans. Able to restore track geometry faults by manual repair of assets as part of a team. Under direction, restore plain line track geometry, rail switches and crossings, and where appropriate conductor rail systems, to operational condition and maintain the track and its environment including embankments, cuttings, lineside vegetation, and drainage.

Electrification. Understand electrical and electronic principles. Under direction: assist in maintenance and installation of railway electrification equipment and components; assist in isolation and earthing of electrical systems at different voltages and frequencies, working on live battery & inverter systems and maintaining substation plant.

Overhead Lines. Understand mechanical principles and construction design. Follow instructions to safely and efficiently assemble overhead line components in line with the detailed equipment specification(s), using lifting and access equipment while working at heights, and checking that plant, tools and equipment are fit for use.

Signalling. Understand function and characteristics of railway signalling systems, including electrical, electronic and mechanical principles. Under direction: install & wire signalling or control systems; install position and label equipment & components & cables correctly; undertake installation integrity checks; assist in testing of components & equipment in accordance with wiring diagrams, test specifications & plans; maintain and rectify signal control systems equipment.

Telecoms. Understand principles of electronic devices, circuits, data and communications equipment. Under direction undertake the activities of installation, planned preventative maintenance and maintenance testing activities on operational railway telecoms systems and establish compliance with drawings and specifications. Understand the types of operational constraints when carrying out telecoms installation and maintenance activities, and maintain records associated with telecoms testing activities.

Traction & Rolling Stock (T&RS). Understand vehicle design, construction, maintenance and operation. Under direction, carry out preventative and scheduled maintenance activities and follow vehicle maintenance instructions on T&RS mechanical, electrical, fluid power and electronic communication equipment including ensuring vehicle trim, ancillary equipment and fittings are secured and in good order, check subsystems are operating correctly. Assist with the installation of T&RS equipment, and complete any necessary record cards / forms.

Behaviours: All Rail Engineering Operatives are expected to demonstrate the following behaviours:

- **Act professionally** demonstrating dependability, determination, honesty and integrity. Respect others, act ethically and contribute to sustainable development.
- **Be risk aware** so as to help reduce risks by checking of information, concentration on the task, and awareness of changing circumstances on activity.
- **Display a self-disciplined, self-motivated, proactive approach to work**, able to make independent decisions whilst knowing one's limitations and when to ask for help or to escalate.
- **Work reliably and safely**, occasionally without close supervision, to approved industry standards and safe working practices.
- **Work effectively and efficiently, individually and as part of a team**, maintaining effective relationships with colleagues, clients, suppliers and the public.
- **Receptive to feedback**, willing to learn new skills and adjust to change. Carrying out and record CPD necessary to maintain and enhance competence.
- **Prepared to make a personal commitment** to their employer, the industry and its professional standards.

Duration: The duration for this apprenticeship is a minimum of 12 months

Level: This is a Level 2 Apprenticeship.

Review: The Apprenticeship Standard will be reviewed after 3 years.