



Position: Senior/Principal Electrically Biased Rolling Stock Engineer

Location: Pride Park, Derby

Salary: Competitive basic, with excellent company benefits including competitive pension scheme and private healthcare

AEGIS Engineering Systems is an independent railway engineering consultancy. Since our formation in 1997, we have built an industry-wide reputation for providing engineering expertise, innovative solutions, rapid responses, agile methods and value for money. We are proud to offer employees an inspiring combination of a stimulating environment at the cutting edge of engineering in the railway arena, a supportive and encouraging working culture where work/life balance is a key element, and the opportunity to develop their skills and experience with one of the fastest growing engineering consultancies in the industry.

The Role

We are looking for a Senior/Principal Electrically biased Rolling Stock Engineer to join our Rolling Stock department. In this role, you will be leading the Electrical Engineering activities for various projects.

You will be part of the teams responsible for undertaking the integration design of TPWS Mk4 and ETCS systems on various classes of rolling stock including on-track machines.

As part of the Rolling Stock engineering team including the team of design engineers, for installation designs, you will be providing the initial information for the modification schematics, reviewing, and validating wiring installation information and advising on the correct choices of components and sub-assemblies. You will also be involved in many other aspects of consultancy such as feasibility studies, problem solving, component obsolescence, maintenance extensions, risk assessments and many other areas of Rolling Stock engineering.

An integral part of the role is to ensure that new systems are installed in line with the guidelines produced by the system suppliers by managing the functional interfaces between the new systems and existing train control circuits. These will normally be the conventional, relay-based control systems found on a range of legacy rolling stock, although it may also include the more recent TCMS-based train control systems.

Our engineers' interface with clients and other project stakeholders at both a technical and contractual level. Additionally, as a Senior/Principal Engineer in our team you will also oversee the work of less experienced colleagues, providing advice and assistance as required.



Essential Skills/ Knowledge

A good all-round domain knowledge of electrical circuits and systems on rolling stock (either passenger, locomotives, or OTM/OTP) is essential. This should include experience of integrating or modifying the electrical systems and circuits which constitute the major sub-systems of railway vehicles.

In addition, a good general understanding of rolling stock is required, including non-electrical systems and disciplines. Electrical systems all have physical properties, and it is a requirement to understand the other interface needs of an electrical item / system. These could be mechanical interfaces or even air / water.

The successful candidates should have a proven track record gained not only in new-build or major refurbishment rolling stock projects but also smaller consultancy and problem-solving projects. Ideally, this should include knowledge in modifying driving, braking and safety & supervision systems to include new systems such as the latest TPWS system and ETCS. A sound knowledge of driving controls, auxiliary distribution, door control, TMS, OTDR and passenger information and comfort systems is also necessary.

Key Responsibilities and Accountabilities

Taking ownership of all aspects of the electrical engineering work scope:

- Modifying existing train control schematics to accommodate new circuits and systems and validating the safety and integrity of the changes.
- Ensuring circuit protection through adequately rated protective devices, cabling, and connections.
- Selecting equipment and components to ensure, amongst others, the correct rating, duty, environmental choices, physical suitability, and maintainability.
- Ensuring circuit electrical safety through earthing schemes and calculations.
- Checking and validating wiring changes are consistent with schematic changes.
- Creating functional test documentation.
- Assisting with first in class installation, functional testing, and reliability growth.
- Contributing to risk assessments, FMEAs, hazard analysis, EMC-related issues, certification, and compliance with standards.
- Producing tenders and proposals for rolling stock investigations, modifications, and failure analysis.
- Understanding and contributing to technical issues out of your main domain (i.e., mechanical, safety)



An AEGIS Senior/Principal Engineer is one who combines excellent technical skills with a commitment to deliver first class service to our clients, whilst living the values and culture of the business – respect, excellence, passion, care and do the right thing!

If you share our vision and ambitions and are interested in joining our team, please get in touch by emailing your CV and covering letter to:

katygrace@aegisengineering.co.uk