CASE STUDY

Scrupulous Quality Standards, Speed and Precision for Docklands Light Railway Bogie Repair Project

As part of a maintenance and refurbishment project of the Docklands Light Railway (DLR), Sulzer was contracted to inspect and repair the bogie frames of 91 rail vehicles over the a two year period. The project required considerable attention to detail, especially with regard to the quality processes and documentation, as well as a streamlined welding and machining operation capable of completing each vehicle on time.

Sulzer contracted to inspect and repair bogies frames of 91 rail vehicles over next two years, starting 2016

> *"This project requires precision engineering and almost forensic record maintenance. We have worked very closely with Sulzer to ensure that every aspect of the repairs will meet our stringent criteria. For its part, Sulzer continues to maintain these high standards and the project is looking very positive."*
>
> Donald Macpherson, Head of Technical Services (Rolling Stock) at KeolisAmey Docklands

The challenge

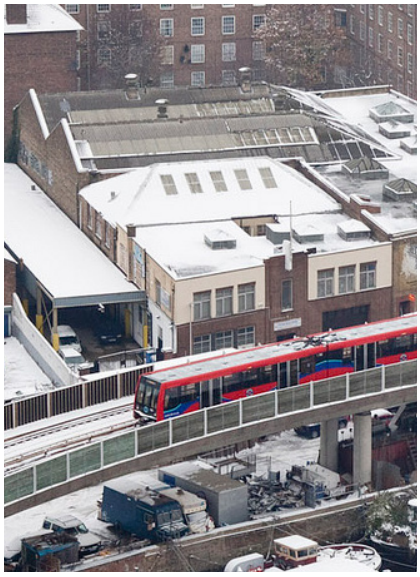
Originally opened in 1987, the DLR consisted of 15 stations and ran 11 single-car trains. Today, this has expanded considerably to 45 stations and 149 vehicles, many operating in 3-car formations. DLR is the owner of the rolling stock and it has contracted the operation and maintenance of the trains to the KeolisAmey Docklands (KAD) joint venture.

Through regular periodic inspections carried out on the rolling stock it was noticed that some of the fabricated sub frames were developing cracks. In order to resolve this issue and to extend the original service life of the bogies, a refurbishment program was instigated to inspect and repair all 228 units as well as permit the bogies to be used beyond their original intended lifespan.

There is a 48 hours' notice period of a bogie set arriving at the workshop in Avonmouth and a service schedule of two weeks set by the customer for each set (consisting of two motor and one trailer bogie) to include transportation, strip down, cleaning, repair of the set.

The Sulzer difference

- Commitment to delivery in line with customer expectations
- Flexible approach
- Full project management
- Development of documentation and processes
- Regular Sulzer - customer communications



[Source TfL]

The DLR consists of 45 stations and 149 vehicles, many operating in 3-car formations [Source TfL]

Bespoke 'gyroscope' frames fabricated in-house to allow bogie workpieces to be rotated and held in place for ease of access to areas in need of repairs

The solution

Adopting and aligning to rail industry QA procedures

Speed and precision

Inspection and testing

- Magnetic particle inspection
- Liquid penetrative inspection
- Recorded dimensional checks with ROMER arm prior to and after repair

Flexible working

- Sulzer accommodated flexible working and shifts to ensure delivery dates are met from minor repairs to cases where frames could be beyond economic repair

Repairs and finish

- Weld repairs and checks
- Full machining capability to finish weld repairs and suspension pads
- Bogies painted ready for delivery

Customer benefit

Going the extra mile to support KAD and provide them with the detailed evidence of adherence to key quality standards, with:

- Coded welders
- RISQS accreditation
- BS EN ISO 8501-01 standards
- Design of quality assurance reporting documentation
- Individual quality reports provided for each bogie frame
- Streamlined processes

Contact
service.avonmouth@sulzer.com

Applicable products
Rail rolling stocks