

Railcare was formed in February 2007 and operates sites in both Springburn and Wolverton. With considerable expertise in Vehicle and Component overhaul, Incident Repair and Spares and Logistics, Railcare offers customers a total Rolling Stock solution.



## RailCare

### Lean Team

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Production Team Leader

**Les Ashton**  
Painter

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Production Manager Components

**Andy Wyatt**  
Paint Team Leader

**Simon Littlefield**  
Production Engineering Manager

**Barry Smith**  
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Supplier representative

### Lean Project

The project was to analyse the processes involved in the contract to refurbish 465 type railway carriages through the bodyshop. Currently, the overhaul time for this train type is 3 weeks per 4 car unit.

The customer perception of this process can be quite poor as they will see the correction of paint and snags out of the process area. Levels of re-work are affecting planned production work. The project was to address these issues and improve overall efficiency.

### Lean tools utilised

The key Lean tools utilised were as follows:

- Process mapping – the team created a detailed process map and took photographs of activities throughout the process. This enabled them to communicate the flow of work and highlight where inefficiency was actually happening.
- Brain storming – the team got together to analyse the process map and to brainstorm the arising issues. This was done across both sites with the objective of achieving consistency and best practice throughout.
- Ishikawa diagrams – these were used to show the impact of inefficiency and the possible root causes
- Pareto analysis – data was collected around the project issues and charted for prioritisation

- 5 Y's – during the brainstorming sessions the team carried out 5 Y's analysis in their quest to find the root causes
- PDCA – this cycle was used as the overarching tool for the project

### Lean Analysis and Issues arising

As work is carried out on a carriage, there are many activities that occur over a site-wide 21 day cycle. Activities through the paint shop are planned to be completed by day nine which is very challenging. Although the vehicles are returned on target, rework and decals still need to be completed out of process. The team used this project to highlight the impact of these issues.

During the project the team measured actual activity over three units. They found that paint shop staff were working on three units at once when they should have been working on one, and snags were still being rectified on day 19 which was in effect 10 days outside of the allocated time.

Examples of waste identified:

- High amount of re-work = unhappy customer.
- Waiting – both the paint staff and other staff have to wait for each other to carry out specific tasks.
- Transportation – materials and access platforms required for re-work and high decals.
- Motion – excessive movement (walking) of staff to undertake painting activities.

### Project Implementation

During the project the team began to introduce improvements which included:

- development of Standard Operating Procedures (SOP's)
- improved lighting within the booth
- improved paper work flows for traceability
- team briefings to all staff to generate and implement improvement ideas
- changes to working methodologies
- operators trained to carry out in-process inspections

### Post programme Implementations

Upon completion of the LMT programme the team implemented further improvements:

- installation of improved extraction
- further improvements to lighting
- enhanced preventative maintenance procedures
- continuous monitoring of snags

### Lean Programme benefits

The team felt that the programme enhanced team building across the two sites and enabled individuals to gain a good understanding of how the Lean tools should be utilised. The various analysis and resulting documentation has created a driver for continuous improvement to actually take place. Lean Thinking is allowing the company to address difficult issues within their processes.

Already the team are starting to see smoother flow of throughput and this is having a positive impact on morale. As business activity increases the team can see the potential to be more efficient in the processing of carriages. This will have a significant impact on cost reduction initiatives and also fits with the company's strategy to impact positively on the environment.

### Environmental benefits of "Lean"

An analysis of electricity usage has highlighted a reduction of 193,157 kwh per year due to this project – this will see a reduction of 105.6 tonnes of CO2 and a cost reduction of £19,200. In addition the team are progressing with a new energy management system for gas which will see a £40,000 annual reduction after an initial £40,000 capital expenditure in year 1. This will have a positive effect on CO2 emissions of 343 tonnes per annum.

### The future

Railcare will continue to develop its staff in order to create a successful business for the future.

"Overall the team found that bringing people together from different disciplines and different sites was very valuable to the Railcare business. This created a pragmatic understanding of "Lean" that will now dissipate through the different disciplines and sites and continue to add value to the company and its staff"