

Pit Stop Techniques

London Underground Maintenance

Time in Maintenance
reduced from
**5 days to
3.5 days**



QCO Workshop

The Client

London Underground operates one of the world's busiest urban rail networks, with maintenance depots playing a critical role in keeping trains safe, reliable and available for service.

The Context

London Underground was looking to improve the reliability and productivity of its operations while reducing the cost of maintaining an ageing network.

Its wider asset strategy involved making fleet maintenance more efficient, improving reliability and reducing unit maintenance costs through better ways of working.

The Model Area

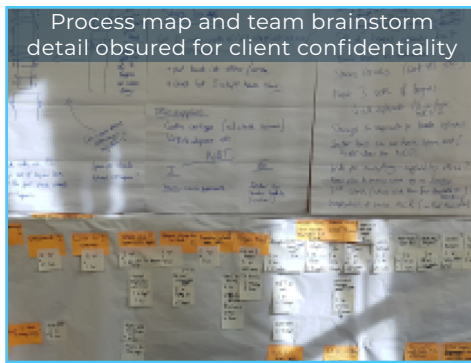
Stonebridge Park Maintenance Depot was chosen as one of the model areas for improvement.

The focus was on improving the effectiveness of planned maintenance for the Bakerloo line fleet.

The Problem

The team needed to understand:

- What genuinely had to happen while the train was stopped?
- What could be prepared beforehand or completed externally?
- How could the remaining work be organised to reduce delays and waiting?



Cross Functional Team

- **Maintainers** - bringing detailed knowledge of the maintenance activities and practical constraints
- **Engineers** - providing technical expertise and helping challenge how work was traditionally carried out

Challenges

- Overcoming fear of job cuts and making this about the work
- Enabling everyone to feel safe to contribute
- Understanding real frustrations and difficulties in the work
- Turning improvement ideas into practical changes the Maintainers could make to improve the job

Quick Changover

Stage 1	Map the Process The team mapped the five-day maintenance process in detail, capturing the sequence of work, dependencies, waiting and hand-offs. This created a baseline and shared understanding
Stage 2	Internal vs External Work Each activity was challenged using Quick Changover principles ▸ Can this work be pre-prepared? ▸ Can this work be done post stop? ▸ Are we efficient during the stop?
Stage 3	Redesign the Maintenance A very large part of the maintenance was Bogie refurbishment which the team found could be done externally. This together with kitting for each large activity reduced turnaround time by 30%.
Stage 4	Implementation The revised maintenance process was introduced to the rest of the depot by the team. The result was a reduction in the planned maintenance window from: 5 days to 3.5 days

Results

Over the next 8 weeks the Team worked to implement each Idea.

This meant that the turnaround time of a key maintenance activity for the trains reduced by 30% freeing up additional capacity.



Momentum Feedback

"The pit programme lift is going well. Now turning the lift around in 3.5 days. We have cleared xxx completely. Painting and marking out the area today and tomorrow. Then of course it will be the mapping what goes where and photographs to embed and sustain. Thank you for all your help"

Depot Process Manager