

Re-setting the Standard

De-Bottlenecking: Finding Free Speed

BACKGROUND

A Manufacturing Manager was under pressure to deliver against tight budgets with finite line capacity and negative labour variance. Our Opportunity Assessment at his Biscuit Factory identified free speed as one of the largest opportunities on the site. As a result of line speed, the first half of the year's labour variance was tracking at £400k adverse to budget. A four week Breakthrough Improvement Demonstration workshop was implemented and the De-Bottlenecking Method (capacity profile on a biscuit wrapping line) showed that the throughput bottleneck was the manual feeding station. The study also demonstrated that there was a significant capacity opportunity to be seized.

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FINDING FREE SPEED

The speed of the machine was set at 65 packs per minute against a costed target of 95. Perception was that the biscuits would break more easily at the higher speed.

The workshop team gradually turned the speed up towards 95. After each incremental speed increase, the team carried out a throughput study and found the waste percentage stayed constant whilst throughput increased by 40%, with no increase in customer complaints.

Studies were also completed on the ergonomic effect of the extra packets on operators through engagement with the area Health & Safety representative. Once it was confirmed that it was a safe practice, the speed was set as the new standard.

Speed was then increased across the other 7 lines in the area which now run at 97 packs per minute, and as a result, the labour variance has improved by 330k in just 12 months.

Subsequently, a Short Interval Control (SIC) process was introduced on the line to monitor hourly throughput and track problems and any speed restricting problems in real time.

SUSTAINABLE RESULTS

Significant line speed improvements were sustained over 18 months, with this 'watch a lot, alter a little' approach resulting in:

- A 40% increase in line speed through free speed
- Delivery of 12 month labour variance benefit of £330k

A total 12 month benefit of £400k would have been achieved but major engineering downtime in the summer affected these results. Once resolved, the plant recovered to an even better level **resulting in £575k of annualised benefit.**

