

Validate the Throughput of an Automated Closure Line of a Leading Line Builder - Case Study

Summary

A leading line builder designed a new body shop line for its client in the automobile industry and wanted to check the feasibility of its proposed design and identify minimum buffer sizes to achieve target production

Aims/Objectives

- To validate throughput from the system
- Identify the Bottleneck in the system
- Provide recommendations to alleviate the same

Client's Challenge

- Check feasibility and validate the proposal
- Identify and alleviate bottlenecks in the system
- Identify minimum buffer sizes required to achieve target production

PMI's Approach.

- The detailed process was modeled in Tecnomatix Plant Simulation
- The operating sequences and downtimes from the client were provided through an Excel interface to the simulation
- The buffer variation, throughput and time-in-state graphs were recorded and studied

Finding & Recommendations

The system was operating only at 85% of its designed capacity

We were able to identify the first bottleneck to be the buffer between an assembly and an inspection station

- *The minimum buffer requirement was suggested through buffer sensitivity analysis*
- *The throughput loss due to selecting a smaller buffer was demonstrated*

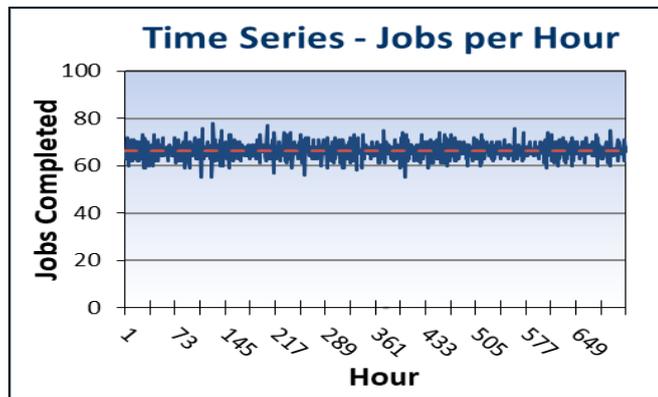
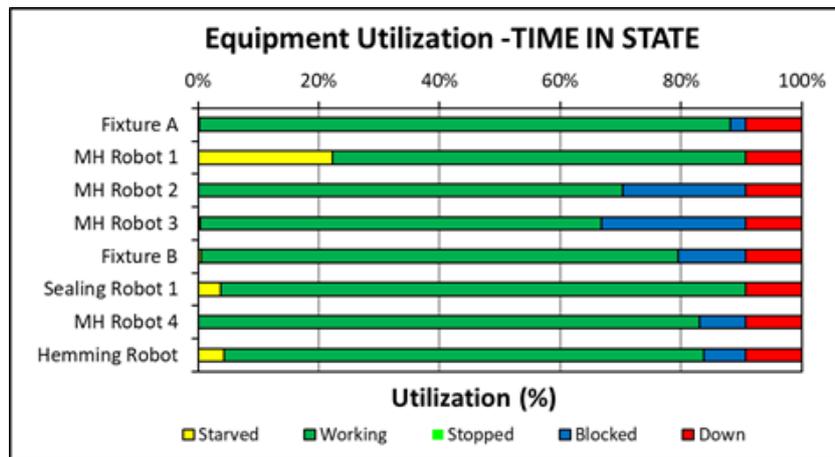
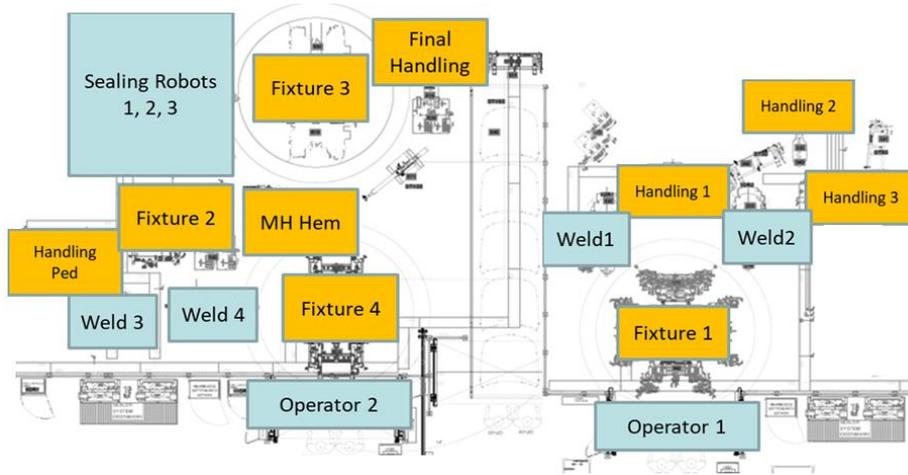
The second bottleneck of the system was the operating sequence of a material handling robot

- *The cycle time of the handling robot needed to be reduced or the operating sequence had to be modified*

Supporting Videos and Images -



Media2.mp4



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