Process Improvements for Caterpillar’s 988K Line

Project Objectives:
- Capture and analyze actual data from the 988K line in order to improve the current Plant Sim model
- Use data to reduce WIP and improve employee underutilization
- Capture defect data for Plant Simulation Model
- Improve ergonomic and safety conditions

Design Tasks:
- Conduct detailed time studies on each operator in 9 zones
- Compare zone and operator efficiencies
- Analyze data for line balancing opportunities
- Set up data collection systems on three zones to capture defect rate
- Model defect probability and rework time to be inputted into Plant Sim
- Analyze zones with ergonomic issues with 3D Static Strength Prediction Program
- Develop new zone layouts to increase efficiencies by decreasing non-value added time

Team Members
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Final Design:
- Produced detailed time studies to improve Plant Sim model
- Designed a layout change to Zone 2 to reduce travel time and improve employee underutilization
- Balanced operations in Zone G to reduce idle time variance
- Implemented a continuous defect data collection system and used data in model
- Improved employee underutilization by reducing WIP on line
- Proposal improves line balance efficiencies by over 13%

![Graph showing before and after process improvements](image)