

CASE STUDY:

Truck Body Manufacturer Boosts Operational Efficiency to Keep Rolling



The Client

An industry leader in transportation for Trailers and Truck Bodies in the United States. The client wanted to pursue increasing their market share in Truck Body and wanted to explore the possibility of building a new facility. The manufacturing department looked for outside help to turn these pursuits into projects.

The client set out to improve operational performance by increasing throughput, reducing Work-in-Progress (WIP), and optimizing labor efficiency. The project focused on enhancing production processes, addressing material delays, and minimizing rework.

The Challenge

The Truck Body building was across the parking lot from the larger Trailer department. Although a Truck Body is typically half the size of a Trailer, the processes to build a Truck Body were much different. The client had difficulty separating the business functions between Truck Body and Trailer which led to some inefficiencies in the manufacturing process.

Material delays were mainly caused by subassembly parts being built in the Trailer building which led to priority issues in production and delivery. Delays in material would lead to schedule instability and constantly create a larger WIP.

Quality defects occurred during production because of standard work lacking correct information and/or human error mistakes due to a rushed pace environment. Quality defects were moved offline and increased the WIP.

The data needed to validate increasing Truck Body's market share was extremely hard to obtain with an inefficient process and an inaccurate baseline.

The Solution

USC Consulting Group partnered with the client's team to devise and implement measurable deliverables. The improvement efforts focused on throughput, WIP reduction, mitigation strategies, and hours per invoiceable unit.

Throughput (Invoiceable Units Over Base Period):

Baseline and Improvement: The baseline throughput averaged 11 invoiceable units per week. After the completion of the engagement the facility was achieving an average of 24 invoiceable units — **a remarkable 118% increase**.

Key drivers that led to these results included:

- Developing heijunka boards among multiple sub-assemblies to ensure daily goals were aligned. This lean methodology tool created a “pull” system on the shop floor that could be traceable and repeatable.
- Enhancing scheduling and production alignment.
- Improving tracking mechanisms for setups and completions, maintaining a steady rate of 24 units
- Addressing material delays and refining the balance between setup and completion rates to prevent bottlenecks.

WIP Reduction:

Online Work-In-Progress saw a significant reduction from 131 units to 38 units — **a 71% decrease**.

These results did not come easy. The challenges the team and client needed to overcome included:

- Delays from external suppliers, particularly with chassis, lift gates, and column gates, intermittently increased WIP and production backlog.
- Imbalances between setup and completion rates also contributed to temporary spikes in WIP.



To conquer these issues, the team developed an Area Readiness tracker within the client's communication system to create transparency of moving parts between outside vendors, internal fabrication, material handling, and supervisors on the shop floor. This tracker was displayed on the visual boards of the shop floor to prevent schedule instability and increase optimal solutions for any missing parts.

Mitigation Strategies:

USC assisted with leadership meetings to highlight the key issues that were occurring in Truck Body. A standard agenda was created for leadership to evaluate the progress of parts, units, and labor at one time. This flagged the risks before they became a problem which could affect results.

These tactics improved coordination with suppliers to mitigate delays. It refined production scheduling to align setups and completions, thus preventing bottlenecks. Plus, it focused efforts on clearing pending units, especially in the sub-assembly phase, to streamline mounting processes.

Hours per Invoiceable Unit:

Completion checklists were developed to travel with the unit being worked on which had accountability measures put in place. These checklists moved with the unit body and allowed assemblies downstream to view who was responsible for installations and when the installations occurred. The added documentation created accountability for the shop floor which helped prevent defects from moving down the line.

A Time Loss Analysis revealed that during a three-month interval rework accounted for 129.55 hours of lost time, while material-related delays added another 140.23 hours.

To combat this, optimization measures were put in place:

- Enhanced quality checks at key production stages to reduce rework.
- Implementation of standardized work processes to improve consistency and reduce labor hours per unit.
- Introduction of more precise scheduling and tracking tools to minimize idle time.

These initiatives helped optimize labor efficiency, contributing to the rise in throughput and reduction in WIP while cutting unnecessary labor hours.

The Results



- Throughput: **Increased by 118%**, reflecting more efficient processes and better alignment of setup and completion rates.
- WIP Reduction: Achieved a **71% decrease**, clearing bottlenecks and enhancing production flow.
- Labor Efficiency: **Reduction in hours per invoiceable unit**, driven by quality improvements and enhanced scheduling.
- Operational Oversight: Management Operating System (MOS) audit results **improved to an 83% compliance rate**, showcasing better process adherence.

This case study underscores the power of targeted process improvements, supply chain coordination, and labor optimization in boosting overall operational efficiency.

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