# Internship Report

*On*

## Cycle Time & Process Efficiency Analysis In Metro Final ASSY

*At*

Johnson Lifts Private Limited, Oragadam

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*Submitted by*

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# Cycle Time & Process Efficiency Analysis In Metro Final ASSY

## Objectives :

- Identify inefficiencies in key production stages.
- Classify Non-Value Added (NVA) time accurately.
- Suggest actionable process improvements.

## Scope Covered :

- Studied 8 major tasks across 3 jobs (E-A3568, E-A3571, and E-A3573).
- Compared planned vs. actual manpower and cycle time.
- Quantified and categorized NVA time by source (Man, Machine, Material, Method).

## Key Findings :

- **E–A3568 :**
    - Planned Time : 60 Hrs
    - Actual Time : 60 Hrs 50 Mins
    - NVA Time : 30 Hrs 35 Mins
    - Total Cycle Time : 91 Hrs 25 Mins
    - Planned Man Hours : 2040 Hrs
    - Actual Man Hours : 2190 Hrs
    - NVA Man Hours : 1101 Hrs
    - Total Man Hours : 3291 Hrs
- **E–A3571 :**
    - Planned Time : 60 Hrs
    - Actual Time : 59 Hrs 21 Mins
    - NVA Time : 25 Hrs 35 Mins
    - Total Cycle Time : 84 Hrs 56 Mins
    - Planned Man Hours : 2040 Hrs
    - Actual Man Hours : 2255 Hrs 18 Mins

    - NVA Man Hours : 972 Hrs 10 Mins
    - Total Man Hours : 3227 Hrs 28 Mins
- **E–A3573 :**
    - Planned Time : 60 Hrs
    - Actual Time : 61 Hrs 24 Mins
    - NVA Time : 21 Hrs 4 Mins
    - Total Cycle Time : 82 Hrs 28 Mins
    - Planned Man Hours : 2040 Hrs
    - Actual Man Hours : 2210 Hrs 24 Mins
    - NVA Man Hours : 758 Hrs 24 Mins
    - Total Man Hours : 2968 Hrs 48 Mins

## Common Bottlenecks :

- Frequent **crane wait time** and **material unavailability**.
- **Skilled labor shortage** and **tool search delays**.
- Presence of **rework** and **free roam/no work** instances.

## Non-Value Added (NVA) Breakdown :

**NVA Categories :**

- **Man :** Breaks, Lunch, Free Roam, Rework
- **Machine :** Crane idle time, Welding wait
- **Material :** Store wait, Tool search, Material fetching
- **Method :** Lack of skills, Misalignment, Waiting on previous steps

**Highlights :**

- **Crane Wait :** Up to 1 Hr 48 Mins (E–A3571)
- **Rework Time :** Up to 1 Hr 57 Mins (E–A3568)
- **Tool Search & Material Wait :** Over 1 Hr in multiple cases
- **Free Roam/Idle :** Common in Incline Track & Step Alignment processes

## ProdIntel – Production Intelligence Web Tool :

**Overview :**
Developed as an internal tool to streamline production coordination, material tracking, and transparency in daily operations.

**Modules Implemented :**

- **Job Scheduling :** Assign and view task-wise responsibilities.
- **Material Movement :** Track movement of materials from the store to the production line for timely availability and minimal downtime.
- **Store Management :** Live update of stock and issued items.
- **Dashboard Monitoring :** Track live task progress and delays.
- **Role-Based Access :** Different dashboards for operators, store managers, and supervisors.

**Impact :**

- Reduced miscommunication and follow-ups.
- Improved accountability across departments.
- Transparent tracking of daily activities and bottlenecks.

## Suggestions for Reducing Non-Value Added (NVA) Time :

**Man (Breaks, Rework, Idle Time) :**

- Allocate breaks in a staggered manner to avoid group-level idle time.
- Conduct short upskilling workshops to reduce rework and free roam cases.
- Assign backup manpower during critical assembly tasks.

**Machine (Crane, Welding/Grinding Delays) :**

- Use a centralized crane scheduling system to avoid conflicts.
- Ensure tools like welders and grinders are inspected and pre-staged before task start.

**Material (Store, Tools, Stockouts) :**

- Implement a just-in-time material delivery model using ProdIntel's tracking features.

**Method (Skill Gap, Misalignment) :**

- Develop clear SOPs and visual aids at each station to improve process consistency.
- Introduce a pre-task alignment check to avoid delays due to misfits or rework.
- Cross-train team members to reduce dependency on a single skilled person.

## Conclusion :

Over the course of this internship, a comprehensive **Cycle Time and Process Efficiency Analysis** was conducted across three escalator projects (E–A3568, E–A3571, and E–A3573). By breaking down both planned and actual execution timelines, the analysis exposed major sources of inefficiency such as **machine idle times, rework, tool unavailability, and material delays**.

To address these issues and enhance visibility, I developed **ProdIntel**, an internal web-based platform that enables **real-time tracking of production, material movement from store to production line, and job scheduling**. This tool not only reduced manual coordination but also improved transparency and accountability across departments.

The insights gathered from both the time studies and digital implementation serve as a foundation for **streamlining workflow, reducing non-value-added time, and standardizing production practices**.

*All supporting data sheets, NVA breakdowns, and time analysis have been attached along with this report for reference.*