Work Standard Development in Tractor Manufacturer: A Case Study

1. About the Client

- **The Client has been India's undisputed No. 1 tractor brand and the world's largest tractor manufacturer by volumes.**
- **Client has leveraged on their quality, as the leading tractor brand in the world, it has the most comprehensive range of tractors.**

2. Aims/Objectives

- **New model work content measurement using PMTS technique by seeing the DFA drawing (Design for assembly).**
- **Work distribution/ line balancing.**
- **Manpower utilization & Capacity calculations.**
- **Using Client-side software to estimate the WC. (SAP – Systems Applications and Products in data processing)**
- **Improving the effective utilization or optimization of resources.**
- **Improvement & suggestions for making existing system better.**

3. Keypoints

- **Line balancing for 2.56 min takt with multi model scenario.**
- **Bottleneck station identification.**
- **Workstation design w.r.t existing layout and station wise line balancing.**
- **Manpower requirement calculation w.r.t takt.**
- **Line balancing prepared with 85% utilization.**

4. Client Challenges

- **Reduction in manpower fatigue.**
- **Dashboards for production planning as per demand.**
- **Muda & Muri analysis for further improvement.**
- **Identify true potential capacity of plant.**
- **Low manpower utilization.**

5. PMI Approach

- **The study was organized in a 3-stage process:**

1. Data Collection – DFA and current layout were taken from client thoroughly understood so as to understand the assembly process.
2. Estimation & Data Analysis – PMTS estimation, Line balancing with the help of work distribution and dashboard preparation.
3. Results and Conclusion – Work distribution/ line balancing w.r.t multi-model scenario and resource calculation.
4. Involvement of Associates –

PMI – 1 Project Manager, 2 Engineers.
Client – 2 Project Co-ordinators.

4. Data Collection

- **Existing layouts walk through and observations.**
- **Understanding sequence of operations with the help of DFA Drawings and Current layouts.**
- **Meeting with the Process team.**
- **Understanding the DFA drawing with plant team.**

5. Data Analysis

- **Preparation of elemental details using PMTS technique & validation by client.**
- **Analysis (Work distribution/VA-NVA identification) for manpower calculation, optimum manpower utilization & identifying capacity.**
- **Improvement & suggestions for fatigue reduction & making existing system better.**

6. Results and Conclusion

After doing analysis and evaluation following results were obtained –

1. Manpower utilization of 85%.
2. Elemental details preparation for observed drawings using PMTS technique.
3. Verification of elemental details with process engineer and changes if any.
4. Work distribution/ line balancing w.r.t multi-model scenario.

CONTACT DETAILS

- **Address :** Plot No. 1&2, Khasra No. 57/4, Isasani, Hingna Taluka, Nagpur – 441110
- **Phone No :** (+91) 844-605-6583 / 3180
- **Email :** asia@pmcorp.com
- **Website**: www.pmicorp.in