

CASE STUDY 003

V 001

10.19

CASE:

RCM/TPM Engine
Line

CLIENT:

Daimler

PSW
GROUP

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Client Challenge

The case study reported in this paper has been conducted at an automobile engine assembly plant in Stuttgart. The management of the company observed that poor performance and output of assembled engines was clearly related to the performance of the assembly robots and general maintenance activities.

Since the plant facilities and manufacturing processes were extremely equipment intensive and the data collection and analysis process revealed that the total idle time for the critical process equipment was observed to be extremely high which was not at all acceptable under the prevailing circumstances. Thus, the need for fostering an efficient TPM implementation program was felt fundamentally necessary.

Solution

TPM implementation started with the selection of key model machines and measurement of TPM effectiveness with initiation of four activities – Reliability Maintenance, Autonomous Maintenance, focused improvement, planned maintenance and supporting GAE (OEE) measures.

To achieve this, the following studies were completed:

- Review OEM maintenance manual for designated tasks
- Review breakdown history
- Shopfloor Data Collection
- Physical go-see on equipment for additional tasks
- Collation of all requirements into one comprehensive list
- Separation of tasks into functional ownership

Cross-functional Maintenance Workshops were held, focusing on process alignment and links between system usage and operational activities. The outputs of these workshops were validated with OEM Process documents, which provided critical inputs to the Training, and Stabilisation plans.

Project Realisation

The Maintenance Workshops identified considerable misalignment of process, both between functions, and operationally with given departments.

Where necessary, “Go Look See” (Gemba Kanri) activities were initiated to resolve deadlocks and break down silos.

Client ownership was encouraged for each element, improving business TPM readiness. Following acceptance of the (To-Be) Processes, a detailed training matrix was prepared together with a post go live stabilisation plan, providing considerable risk mitigation.

Some specific activities were:

- Upload of additional tasks into the CMS system.
- Standardised Work Order Task Allocation process, with a series of Integrated Work Team Meetings, based on defined GAE (OEE) reports.
- Minor repairs of equipment to ensure stable TPM implementation
- Implementation of an integrated Defect Notification review and approval process.
- Supported the business in updating ISO / Quality Management documentation to reflect the above changes.

Project Impact

As with all interventions, the overall programme was designed to leave a legacy of self-sustaining improvement. Therefore as well as delivering outstanding operational performance, the programme leaves in place:

- A high state of equipment readiness, including awareness of training needs and impacted processes;
- An operational Stabilisation Strategy, which has supported the transition to steady state of equipment management;
- A stable equipment process at 80% - 85% GAE (OEE)
- Senior Management awareness of process criticality and its close links to RCM.