

Lean implementation for more effective maintenance and 35% downtime reductions in the machine tool maintenance department of Aerospace OEM.



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*Coriolis' project delivery was a true 'meeting of minds', they were careful to engage us at every step, creating a real sense of internal ownership throughout the MTM organisation.*

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**Client Head of Manufacturing**

## Challenge

**With an order book worth £60 billion, the client is one of the world's largest manufacturers of aircraft engines.**

The Machine Tool Maintenance (MTM) function plays a significant role in ensuring the on time delivery of high quality product and in the second half of 2006, we made contact with the Managing Director of Turbine systems, who said that as a business they had identified that setting MTM on the path to world class had been identified as a key strategic goal for the business, and that they knew they lacked some of the skills and knowledge required to make the journey alone.

Historically disparate management systems had been developed across all of the sites within the Turbine Division. This had resulted in lack of standardization and a failure to ensure best practice and common goals. A review of key management controls had identified a need for better resource management as well as the need for a more visible management control systems that provide conclusive evidence of excellent performance and areas for improvement.



*Coriolis' method of working with staff to develop the new processes was very inclusive and there have been clear results. Coriolis gave traction to this project, devoting their resources to drive improvement in a partnership approach.*



Client Head of  
Manufacturing

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## Transformation

**The clients' Machine Tools Maintenance drew on Coriolis' capability in Effective Engineering and achieved results through root cause analysis, team development and coaching, cost control and maintenance strategy management.**

It became apparent early on that the reporting of downtime was essentially fictitious, and compounded by a lack of standard time reporting processes. The first step towards excellence was to agree and implement a system for operational downtime recording. Clarify the system and behavioural issues causing the information to be unsatisfactory. The overall process was defined to get maximum value from MTM in driving key KPIs. The three main issues were identified as repair time, waiting parts and waiting resources.

MTM resources were then prioritised to maximise their effect in terms of machine availability, especially on critical equipment using systems that ensure that MTM resources are utilised on a relatively balanced basis. Systems to enable accurate resource planning were installed and controlled that ensure the best responsiveness in conjunction with the existing in-house reporting facility. Critical Machinery was redefined to eliminate the need for excess resource provision and planned maintenance systems were standardised across the Turbines sites resulting in the planned level of PPM activity being achieved. A Machine Care strategy was implemented across all sites that utilised operators on a systematic basis to carry out autonomous maintenance activities and effectiveness of TEM activities were maximised by relating the work done at each site to similar scenarios at other sites.

TPM was improved through optimisation studies of corrective maintenance vs planned maintenance, and steps were put in place to ensure planned maintenance was carried out. A SMED type process was applied to planned maintenance activities. A skills availability planner, a critical spares calculator and a breakdown distribution simulator were implemented to improve planning procedures.

## Impact

- **Planned Maintenance adherence rose to 98%**
- **Spend against budget reduced by £1.6M**
- **Furnace downtime reduced by 35%**

Through more effective planning and completion of preventative and reactive maintenance the MTM saw decreases in downtime on critical assets as high as 35%. Better planning and scheduling of maintenance improved scheduled maintenance adherence to a record 98% and financial savings of over £1.6M resulted.