



MAINTENANCE PERFORMANCE AIR TRAFFIC CONTROL

A
Case
Study
by

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Introduction

The client:

The client was a government owned company in charge of air traffic control in a Southern European country.

Scope:

The program covered the entire maintenance activity developed by the company.

Departments involved:

The maintenance activity was divided into different departments. There were five different departments depending on the location and two other maintenance departments with specific functions (electromechanical, telecommunications) all over the country, all depending on the operational division. The department that reported to the Safety and Quality Division Department were very much involved and were in charge of formulating the maintenance procedures and supervising the efficiency on the maintenance.

Other stakeholders:

Labour unions

Because the company was heavily unionized, there were three labour unions involved in all of the processes, from the analysis to the implementation project.

Board:

The management was having serious problems not only with the different maintenance managers and staff, but also with European authorities on safety issues.

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Problem Statement

Preventive maintenance: Lack of compliance with preventive maintenance was leading to critical breakdowns. Preventive maintenance activities were defined by suppliers, even when a strong engineering department was available.

Poor records and contradictory information on compliance was due to the lack of procedures and control.

Spare parts inventory: Critical spare parts were poorly defined and wrongly placed, when available. Stocks were poorly controlled and oversized.

Corrective maintenance: Performance was not measured and priorities not defined, nor regulated.

Scheduling: Preventive maintenance activities were poorly scheduled, with no norms neither the crewing defined. Procedures, when existent, were not available on the floor. Staff were not allocated effective schedules according to needs. On call scheduling was poor and limited.

Maintenance performance, in general, was perceived as poor and the staff, including the managers, were extremely demotivated and resentful.

Maintenance management systems were also incomplete and there were almost no indicators defined to measure performance, no norms or standards for planning the work and finally no control over the outcome. Every time there was a critical break down poor performance was accepted.

The Analysis

The analysis team was made up of a chief analyst, a chief of operations, a project director, two senior consultants and two junior consultants.

During the analysis multiple observations were made on the floor concerning levels of occupation, timing activities, comparing procedures and working instructions with reality, and the statistical information on performance was studied and processed.

Values and behaviours were surveyed and motivation and climate evaluated. Processes were broken down and management systems for forecasting, scheduling, planning, assignment of work, following up and control on tasks and performance were studied in detail and analysed with the managers and supervisors. Supervisory and management skills were evaluated and training needs identified.

Finally, a complete implementation programme was agreed with the managers and the Board.

A very intense activity was developed with the labour unions in order to convince them of the obvious benefits of the program in terms of climate, motivation and work satisfaction.



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In fact they became very strong supporters of the implementation programme.

Objectives

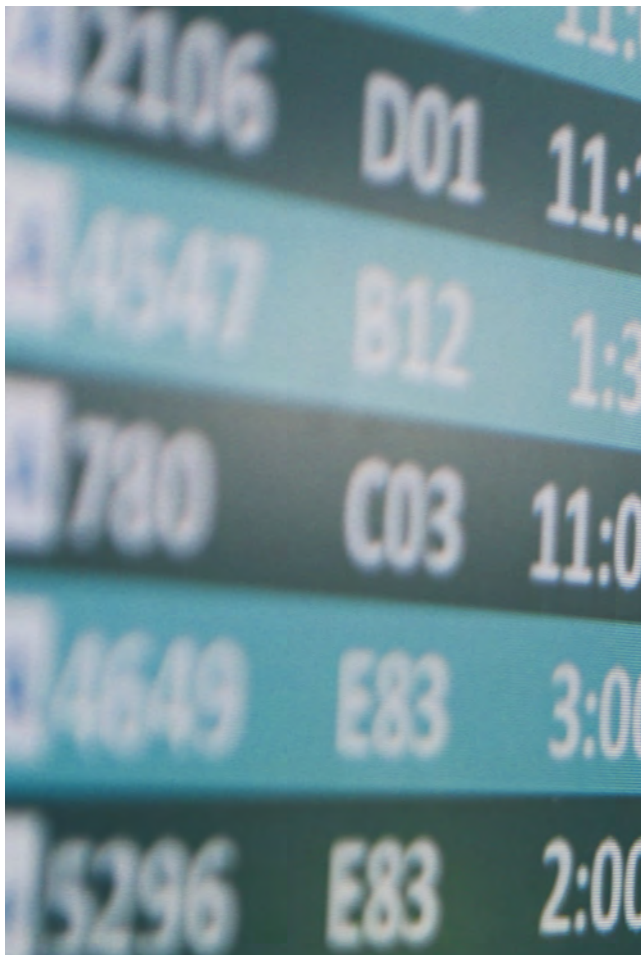
1. To deliver a radical improvement on maintenance performance ensuring it met all the European requirements.
2. To achieve a substantial cost reduction through an improved scheduling, inventory reduction and a reduced investment on equipment.
3. To design and install a maintenance management system with particular reference to goal setting, scheduling and planning and performance service levels, also meeting all the European standards regarding work instructions and procedures.
4. To determine the right structure, accountability and train the management on the required skills to ensure perpetuation of the improved performance.

McGrath Solution

Across all the maintenance areas a new management system was designed and installed with particular focus on preventative maintenance planning and scheduling (priority level, activities, staff assigned, time, instructions/procedures availability and responsible manager/supervisor). The management system also addressed follow up on tasks and control of performance which, in combination with the scheduling, resulted in significant performance improvement.

Structural issues such as responsibilities and organisation were also addressed. Training on management skills for managers and supervisors with specific focus on scheduling, norms and follow up techniques (constructive confrontation, management styles, etc..) was also critical for improving performance.

Performance goals and its key performance indicators were set and agreed with management and supervision with involvement of the unions which became allies on pursuing them. The new daily weekly performance report was issued and controlled. Several corrective actions were successfully implemented by specific working groups that were created. An inventory management system was also implemented with a re-definition of the critical spare parts stocks, and new minimum and maximum levels and ordering point.



Benefit 1: Profit

Preventive Maintenance Schedule Compliance

Due to the new scheduling and control, the preventive maintenance was followed and done at a rate of 100%. This new way of operating drastically reduced the need for corrective maintenance in less than three months which freed up some resources for technical/engineering work which also reduced the workload and made it more effective. Equipment performance rose to levels never achieved before (even with older equipment).

Benefit 2 – Equipment Investment Reduction

The reduction on the workload freed some valuable resources which were allocated to the task of reducing workload further and the postponement or replacement of new equipment investments was rescheduled for when really necessary. Regarding the budget approved before the start of the project, a total amount of 4.3 Million was saved in the first year.

Benefit 3 – Inventory Reduction / Cash Flow Release

Inventory was reduced drastically with the new definitions of ordering points and critical spare parts agreed with labour unions, managers and supervisors in all the locations. A significant amount of cash was released during the first year operation (1.4 Million Euros).

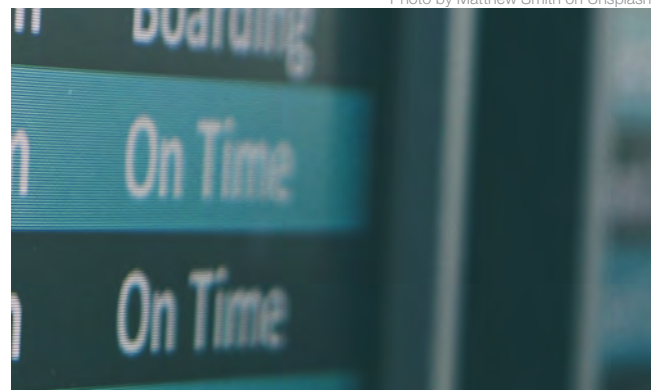
Benefit 4 – Overtime Reduction

The new scheduling system and the progressive reduction of the workload have the effect of the drastic reduction of overtime (including the on call time) which represented an annual saving of 0.6 Million Euros.

Benefit 5 – General Performance Increase and Morale Boost

The new maintenance management system, with goals and key indicators, made measuring performance with objective criteria based on facts possible. Little by little performance improved and goals were achieved, which completely changed the perception of the maintenance function in the rest of the organisation. This change led to a boost in motivation and created a sense of belonging to a winning team which increased commitment within the company and with regard to its goals. The work climate change also reached the labour unions who shifted to a more cooperative approach.

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Implementation

From the first day of the analysis onwards *McGrath* staff created a very cooperative approach with the management, the supervision and the labour union representatives. All of them were heavily involved in analysing the problems associated with the existing work methods, and, during the implementation program, developing improved methods based on the new systems and procedures. The manner in which the teams embraced the control systems quickly enabled them to monitor critical data in a more timely and accurate manner.

The implementation program lasted for eleven months with a project team of a chief of operations (part time), the chief analyst (also part time as liaison with the labour unions), a project manager, four senior consultants and three junior consultants.

A monthly progress meeting was held with the executive board and on most occasions, the following day, the same presentation was held with the three labour unions. A weekly review meeting was held with the operations director and the safety and quality director, with the attendance of all the maintenance managers.

Work was based in the headquarters with the intervention of the management team, who travelled weekly. Supervision of the five locations was crucial in order to develop the models that would afterwards be implemented in the five locations. This methodology allowed for it to be possible to incorporate all the inputs from the local managers into every aspect of the new processes and the new management systems (goals, key indicators, scheduling and planning, follow up, corrective actions, working groups conclusions, etc...). This led to a sense of ownership with regard to the new methodologies that in turn ensured the success of the implementation.

The heavy involvement of the unions was also a key aspect for success, because through a cooperative negotiation, the unions also became change agents for the new system, influencing workers' predisposition and commitment.

Some minor structural changes also helped the success of the implementation program, improving productivity and performance.

Summary

The overall financial improvement exceeded the projections made during the analysis. The reduction on equipment investments, the inventory reduction, the overtime reduction had a direct impact on the P&L Statement and released an important amount of cash. But the overall maintenance performance improvement also had an important effect on the operational uptime which could also be measured in financial terms.

From a non-financial point of view, the pressure of the European Union Air Authorities was dealt with successfully, which was something that couldn't be prolonged.

Finally, and bearing in mind that this company was a government owned company, the boost of morale and motivation was a major achievement and the insurance for perpetuating high performance levels for a long period of time.

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