Aspîre

Through Life Cost Reduction Case Study

Background

Aspîre was contracted by the UK Ministry of Defence (MoD) to review the Preventive Maintenance schedule for Nimrod aircraft.

This review was instigated in order to bring about **enhanced Availability** by **reducing maintenance facility visits** and **minimising** the amount of **scheduled maintenance carried out on operational units.**

Aspîre led the task analysis phase of this project. The MoD Reliability Centered Maintenance Group (RCMG) at RAF Wyton provided the overall management and QA oversight of Aspîre's work.

The Aircraft

The Nimrod entered service in 1969 as the MR1 version.

In the 1980s, the aircraft was upgraded to MR2 standard; whilst the flight deck and general systems remained the same (apart from the later addition of an air-to-air refuelling probe) the main underwater and search systems were given a significant upgrade.

In the R1, a sophisticated suite of systems used for reconnaissance and the gathering of electronic intelligence is fitted.

Purpose

The purpose of this task was to identify a suitable maintenance regime that would **minimise** the amount of **scheduled maintenance** that is carried out on the operational units, **freeing up personnel** to concentrate on aircraft preparation, daily checks and unscheduled maintenance.

It was imperative that the recommendations made would **not jeopardise airworthiness**.

Approach

The study captured the extant maintenance requirements, used this as a baseline and analysed historical maintenance records to ascertain if the maintenance activities could be re-arranged in a more efficient manner.

RCM is the application of a structured method to establish the optimum preventative maintenance for a given platform, system or equipment. It is an effective, proven methodology for rationalising maintenance.

RCM begins by identifying the functionality and performance required from the equipment in its operating context, identifies the way in which the equipment fails and the plausible causes of failure and then details the effects and consequences of failure.

This allows an assessment to be made of the criticality of the failure. Where significant safety, environmental. operational or cost consequences are identified the methodology also allows the selection of an appropriate maintenance task that addresses the identified Root Cause of Failure.

For More Information about our services please **CONTACT US.** We will arrange for a Subject-Matter-Expert to talk to you.

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The review identified those maintenance tasks that required a change to their frequency, in order to maintain airworthiness, or obtain greater time between applications. The results and recommendations of this review were then scrutinised and accepted by the MoD.

Individual tasks were re-packaged into an optimised maintenance cycle, using an Aspîre derived methodology, based on access requirements, time to complete, and related engineering requirements.

The final deliverable was a draft maintenance schedule that fulfilled the requirements promulgated by the customer.

Results

The draft schedule was used by the MoD, to implement the new schedule. The initial estimate of **cost savings** were £1.8 million per annum.[1]

Additional benefits include a **more streamlined workflow**, and **reduction** in the **work content** at the deepest level of maintenance.

Nimrod Specifications
Engines: Four Rolls-Royce Spey turbofans
Length: 118ft 9in (36.19m)
Wingspan: 114ft 10in (35.00m)
Top Speed: 575mph (926km/h)

Conclusion

This task demonstrates the real-benefits achievable by engaging a specialist Small-to-Medium Enterprise (SME) at what they do best.

The experience and innovative thinking of Aspîre's Engineers allowed the task to focus on the potential 'show stoppers', resulting in rapid identification of a suitable process for the task, and definition of an acceptable solution.

This Case Study provides an excellent example of Aspîre's ability to embrace customer requirements, whilst providing a pivotal role in addressing complex issues, involving many stakeholders.

[1]Source – Nimrod Maintenance Schedules Migration Project, Interim Report, Jan 2005.

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