
COST /RISK OPTIMISATION CASE STUDY

REF:	006
INDUSTRY:	Transport
PROJECT:	Preventive maintenance
DECISION TYPE:	Optimum PM intervals; PM task evaluation; PM opportunities; Repair vs replace options; evaluation of work schedule opportunities
CLIENT:	UK rail transport
TASK:	Recommend an optimum strategy for maintaining the client's national population of 33kV oil circuit breakers

RESULTS

The current maintenance interval for the client's 33Kv oil circuit breakers is four years, but the study showed that the optimum is three. However, large variations in deterioration were recorded and consequently for certain *individual* items of equipment, which were highlighted in the report to the client, a seven yearly interval would be possible.

A switch to three yearly maintenance would save £180,000 over the existing four yearly strategy.

This represents a potential cost saving of between 20% and 30%.

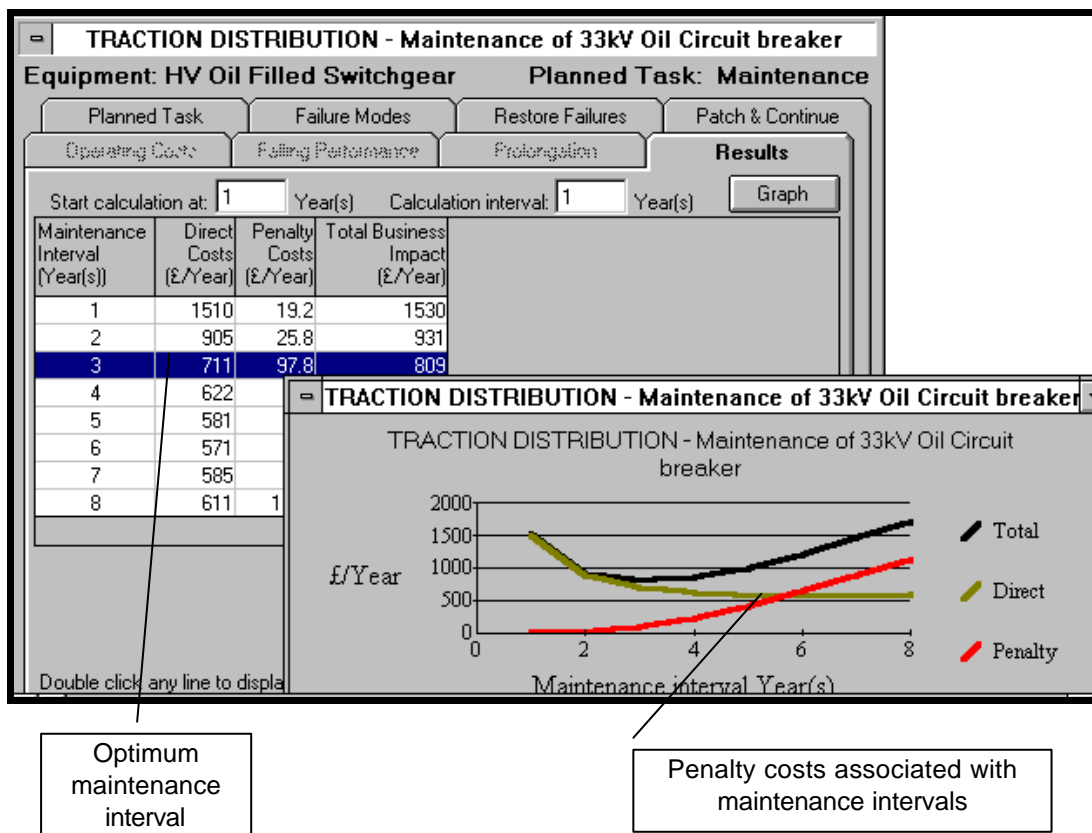
COMMENTS

The client's study team assigned to this project said that APT-MAINTENANCE "proved to be a fast 'What if?' viewer" and concluded that;

"With little data a decision could be made to change maintenance policy and formally demonstrate the cost basis on which it was achieved."

DEMONSTRATES

- Validity of existing maintenance strategy
- Opportunity to vary maintenance intervals for certain items
- The strong link between maintenance decisions and performance objectives
- Substantial cost savings available when switching from strategy based on subjective judgment to APT-MAINTENANCE
- The dramatic variation in the Total Business Impact of different strategies



DETAILS

The 1800 33kV oil circuit breakers operated by the client in the UK were subject to a maintenance interval of four years. Annual maintenance costs for this equipment were between £360,000 and £540,000 on the basis of £200-300 per unit per year. The units are subject to significant variations in deterioration.

APT-MAINTENANCE

The available data, including direct and penalty costs and deterioration rates, were collated by the client with assistance from The Woodhouse Partnership Ltd(TWP). APT-MAINTENANCE software was used as part of a feasibility study for the client on the entire suite of MACRO products. The technique provided the answers detailed above under 'Results'.

APT-MAINTENANCE calculates the best preventive maintenance interval and puts numbers to the costs, benefits and risks of alternative maintenance strategies. It is a highly sophisticated yet simple-to-use tool for balancing equipment reliability, performance and efficiency, maintenance costs, downtime impact and lifespan. It identifies optimal cost and risk strategies, tests the sensitivity of weak and range-estimated information and

quantifies the impact of constraints or intangibles.

The software creates a link between maintenance tasks and operational benefits. The link is displayed in graphical and cost-tabular formats and clearly demonstrates the best compromise and the sensitivity of the data. This case study clearly shows how APT-MAINTENANCE justifies what work is required and when and demonstrates how historical maintenance records can improve the accuracy of its findings.

APT-MAINTENANCE has been described as the single most important breakthrough in maintenance decision-making in the last 20 years. It finally gives asset managers the tools they need to base their policies and strategies on logical calculation and valid evidence, rather than subjective judgment.

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