Analyse and improve your maintenance program.

**Key benefits**
- Conduct trade studies—’Is there a better way (faster / cheaper) to maintain this component?’
- Model-based approach enables a continual improvement process
- Risk mitigation for critical and catastrophic failures
- Knowledge capture / management for the sustainment organisation

**Key features**
- Automated identification of critical items based on a reliability threshold
- Adaptability (configurable to integrate with an organisation’s engineering processes)
- Configurable library of maintenance actions
- Structured reporting / charting of proposed vs. existing maintenance

**The Problem:** When it comes to maintenance and failure management, the key is to possess the “right information in the right time and act accordingly”. The optimal maintenance strategy seeks to eliminate unnecessary maintenance and refine maintenance frequency – thereby reducing the cost of sustainment. It is difficult to identify the most efficient maintenance strategy for a platform in design, as changes in operating modes or environments can have a material effect. The optimal approach is to collect and use operational data to continually refine the maintenance, to constantly improve the maintenance and continually decrease costs.

**The Solution:** The initial determination of maintenance periodicity is based on expected inherent reliability, which should be updated using operational failure rates as the data becomes available. Maintenance Effectiveness Review (MER) using a Back-fit RCM methodology enables the maintainer to identify and prioritize unreliable items and optimise their maintenance in a configuration managed process. MER offers potential cost, schedule and technical benefits to the sustainment of complex platforms.

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Using MADe to improve / optimise a maintenance program can:
- ensure efficient and cost effective maintenance optimisation
- optimize overall platform / system availability and reliability
- mitigate the potential technical and capability risk of unscheduled outages
- focus maintenance analysis efforts on critical / non-performing systems / components

**How does MADe MER optimise maintenance?**
MADe facilitates a Maintenance Effectiveness Review through the structured Backfit-RCM process. Failure, Reliability, and Criticality data is captured within the MADe system model and used to auto-fill portions of the BF-RCM work sheets. MADe leverages automation and currency of data inherent to the model-based software platform to rapidly produce up to date assessment and optimisation of maintenance actions.

Why use MADe for MER?
MADe is a model-based integrated analysis tool set that enables informed Back-fit RCM decisions and maintenance trade studies to identify the most cost-effective maintenance approach for an asset based on its operating profile / environment. The MADe Back-fit RCM workflow is based on the Back-fit process defined by NAVSEA.

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To arrange for a demonstration, please contact us at info@phmtechnology.com
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How does MADe support the Backfit RCM approach?

**What is the expected (inherent) reliability of the system?**

1) **Functional identification:** based on functional dependencies within the asset.
2) **Operational usage:** Evaluate system given assumed usage profile/environment.
3) **Reliability editor:** Enter failure rates for items with design data.

**What is the actual (operational) reliability of the system?**

1) **Defect Analysis:** Operational failures are captured in the model.
2) **Reliability Analysis:** Re-assess reliability with operational data.
3) **Poor Performers:** Identify critical items based on acceptable limits.

**What are the failure causes for the poor performers?**

1) **Identify critical items in the model for failure analysis prior to Backfit RCM.**
2) **Understand the causes, mechanisms, faults and symptoms of the failures.**

**What maintenance already exists?**

Analyse existing maintenance

**Can the maintenance be improved?**

Analyse potential improvements

**What is the outcome?**

Maintenance Optimisation

Detail the current maintenance action/s for the item. If none exists, a maintenance task will need to be created

Optimise the recommended maintenance task (e.g. change periodicity, procedures, remove if unnecessary)

Compare recommended and existing maintenance actions based on potential cost / availability benefits.

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