Initial Date: 29/OCT/2010
IP Number: 2010-2: Clarification of IP44: Evolution/Optimization Guidelines
Revision Date: 17/FEB/2011

Title: Clarification of IP44: Evolution/Optimization Guidelines

Submitter: Boeing

Issue: Current IP44 Guidelines do not provide sufficient guidance for all circumstances when developing and maintaining a scheduled maintenance program.

Problem:

The current IP44 Evolution/Optimization Guidelines do not provide sufficient guidance to address task categories where the increase or decrease of intervals is not based solely on in-service data and thus might be justified by other means. The following items are types of tasks for which the current guidelines are insufficient or impractical:

- Servicing Tasks (such as lubrication and oil refill)
- Tasks with limited applicability (such as one-off options and configurations, or utilization cases)
- Restoration/Discard Tasks
- Maintenance Review Board Report Sampling Tasks

Typically, these tasks do not lend themselves to being analyzed through the review of in-service data by a statistical system, or by collecting such data in a large enough quantity that it requires the use a statistical system.

For non-fault finding tasks, such as servicing or wiring restoration tasks, discrepancies are not usually reported or recorded as it is not the intent of the task to find faults. In general, these types of tasks will not generate in-service data which lends itself to a statistical measurement (including the required 95% level of confidence). As a result, other analysis processes must be utilized to allow an engineering judgment to be formed.

Additionally, more clarification is needed for optimizing tasks with limited applicability; for which it is not practical to generate a large enough sample size to allow the use of a statistical process with a 95% level of confidence as a means of determining an appropriate interval.

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Recommendation (including Implementation):

The following are types of tasks in which the guidance provided in the current guidelines is insufficient or impractical.

- Servicing Tasks (such as lubrication and oil refill)
- Tasks with limited applicability (such as one-off options and configurations)
- Restoration Tasks

Guidance needs to be provided for each category of tasks to allow OEM/TCH evolution/optimization activities to be performed. A new section should be added to address each type of task in which additional or supplemental guidance is required.

Revise the IP44: Evolution/Optimization Guidelines

7.0 Data Review

7.1 Analysis Schedule - Evolution/Optimization timeline
MRB task inte…………..

7.3 Engineering analysis
Engineering analysis will verify that findings are relevant to the scheduled task under evaluation. Non-routine write-ups will be evaluated to determine the significance or severity of findings. Pilot reports and component reliability reports will also be examined to account for line maintenance activities that may be relevant to the task under evaluation. The severity of the findings shall be considered and evaluated.

> ~~Note: Scheduled servicing (e.g. lubrication /oil replenishment) task data do not result in reported related findings, therefore Engineering assessment must be conducted to support an evolution/optimization. Negative long-term effects (e.g. corrosion) resulting from inappropriate servicing intervals must be considered.~~

7.4 Modification Status, AD, SB, SL, etc.
All information ………….

7.6 Servicing Tasks
Scheduled servicing (e.g. lubrication /oil replenishment) task data will not normally result in reported related findings. For these tasks, Engineering assessment and analysis is the primary method to be used to support an evolution / optimization. This is to be used in place of a statistical analysis system showing 95% level of confidence. The engineering assessment should take into account the negative long-term effects (e.g. corrosion) resulting from inappropriate servicing intervals.

7.7 Tasks with Limited Applicability
For tasks with limited applicability such as certain aircraft options or configurations, it is not expected or practical that a significant sample size can be generated in order to use a statistical methodology (as described in 7.2) which shows a 95% level of confidence. For tasks such as these, principle method for evaluation is an engineering evaluation of the in-service findings/records that are available. The evaluation methodology should be described in applicable PPH.

7.8 Restoration/Discard Tasks

For many restoration/discard tasks, fault findings will not typically be recorded in the performance of the task. In these cases, an engineering assessment of shop/teardown data should be performed. This engineering analysis should assess the rate of wear, corrosion, and degradation of lubricants or other included components.

7.9 New tasks having no, or low, on-aircraft accomplishment

Tasks only recently defined and agreed through the MRB Process have either not yet been included in an operator's program or, if they have, have not yet been accomplished on aircraft. As a result, these tasks would have an absence of in-service data that can be analyzed using a statistical analysis system as described in 7.2. This should not automatically exclude the task interval from evolution. These tasks may be reassessed using the data originally considered in the initial analysis to determine if the task and interval remain applicable and effective.