

**International Maintenance Review Board Policy Board (IMRBPB)
Issue Paper (IP)**

*Initial Date: 28/Apr/2017
IP Number: IP165
Revision / Date: R0 / 28/Apr/2017*

Title: MSG-3 Analysis of Engines/APU/Propellers
Submitter: FAA
Issue: Complete MSG-3 analysis of the aircraft.

Applies To:	
MSG-3 Vol 1	
MSG-3 Vol 2	
IMPS	X

Reference current guidance sections below:
Note: Sentences in italics address the CIP issue.

MSG-3, Revision 2015.1

1-1 Objective

It is the objective of this document to present a means for developing the scheduled maintenance tasks and intervals which will be acceptable to the regulatory authorities, the operators, and the manufacturers. The scheduled maintenance task and interval details will be developed by coordination with specialists from the operators, manufacturers, and the Regulatory Authority of the country of manufacture. *Specifically, this document outlines the general organization and decision processes for determining scheduled maintenance requirements initially projected for the life of the aircraft and/or powerplant.*

2-1-1 Purpose

The primary purpose of this document is to develop a proposal to assist the Regulatory Authority in establishing initial scheduled maintenance tasks and intervals for new types of aircraft and/or powerplant.

2-3-1 MSI Selection

Before the actual MSG-3 logic can be applied to an item, the aircraft's significant systems and components must be identified. Maintenance Significant Items (MSIs) are items fulfilling defined selection criteria (see Step 3 below) for which MSI analyses are established at the highest manageable level. This process of identifying Maintenance Significant Items is a conservative process (using engineering judgment) based on the anticipated consequences of failure. The top-down approach is a process of identifying the significant items on the aircraft at the highest manageable level.

IMPS Document

3.0 General Application Rules

3.1 To generate an MRBR/MTBR, it is recommended to follow in all respects the process described in this document. *Any deviations should be identified in the TCH Policy and Procedures Handbook (PPH) and accepted by the Regulatory Authority.*

3.5 The MSG-3 revision valid at time of TC application is the minimum standard to be used for the development of an MRBR/MTBR for a new

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aircraft type. *MSG-3 analysis should be applied to the complete certified aircraft, including the engines and propellers.*

The MSG-3 process and guidance is clear that the process applies to the entire aircraft, which would include the engine, APU, and/or propeller, as applicable.

Problem: The MSG-3 process requires analysis of the aircraft, which includes the engine (and as applicable) APU and propeller(s). We have had some aircraft Type Certificate Holders (TCH) attempt (sometimes successfully) to deviate from the MSG-3 process on powerplants. Reference the examples below:

- Failure to follow the MSI selection process. Considering a engine as a LRU and selecting a restoration task (overhaul). Consequently, omitting or following the MSI selection criteria for ATA 73, 74, 75, 76, 77, 78, 79, and 80.
- Using the engine manufacturer's recommended program to create a "bottom-up" analysis, selecting the manufacturer's recommended tasks and intervals, instead of the "top-down" approach used in MSG-3.
- Excluding the engine from the analysis, with a note in the MRBR referring to the engine manufacturer's recommended maintenance program.
- A Part 25 OEM that attempted to totally exclude the APU from MSG-3 analysis because the APU was not certified for use in-flight, even though the APU manufacturer had numerous scheduled maintenance tasks for the APU in the maintenance program.

IMPS section 3.1 states: "To generate an MRBR/MTBR, it is recommended to follow in all respects the process described in this document. *Any deviations should be identified in the TCH Policy and Procedures Handbook (PPH) and accepted by the Regulatory Authority.*"

The IMPS section above is recommending following "in all respects the process", yet in the next sentence, allows for deviations. The MSG-3 process should not allow a piece-meal analysis with the engine or deviations to the MSG-3 logic. This recommendation will clarify the objective, purpose, and MSI selection process for engines, APU's, and propellers, for use with MSG-3.

Recommendation (including Implementation):

Add the following new paragraph to the IMPS Document:

4.7 Specific Considerations for System/Powerplant

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4.7.8 The MSI selection process should include the engine, the APU and/or propellers as applicable. That is to say, the MSG-3 logic should be followed completely, which includes MSI selection at the highest manageable level, with a top-down approach. No exceptions are allowed for the engine, the APU and/or propellers when performing the MSI selection.

IMRBPB Position:

Date: 28/Apr/2017

Position: IMRBPB agrees to CIP FAA-2017-01 with the changes implemented at the IMRBPB Meeting 2017, which becomes IP165

Date:

Position:

Status of Issue Paper and date:

Active 28/Apr/2017

Recommendation for implementation:

IP165 will be included into the next revision of the IMPS document

Retroactive: NO

Important Note: The IMRBPB IPs are not policy. An IP only becomes policy when the IP is adopted into the processes of the appropriate National Aviation Authority. However, before formal adoption, the IP content may be incorporated by the MRB applicant on a voluntary basis with the agreement of all parties as detailed in the program PPH.