

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

Date: 27/04/2011

IP Number: 110

Revision/Date:

Title: Handling of failures/degradations evident by non-AFM driven flight crew actions

Submitter: Airbus

Issue:

A consistent approach for handling failures/degradations that will be identified by flight crew actions not explicitly mentioned in the AFM should to be identified in MSG-3.

Problem:

Recent revisions of MSG-3 have concluded that only those flight crew 'normal duties' described in the AFM can be considered in determining that a Functional Failure is evident. Though this instruction is clear, it leads to a conservative approach with the potential for the selection of unnecessary maintenance tasks that require accomplishment procedures identical to those performed by flight crew as part of basic airmanship.

Neither Industry nor the Regulatory Authorities have been able to identify an agreed list of actions a flight crew can be expected to perform as part of their normal duties. The absence of such a list leads some OEMs to use engineering judgement to declare a functional failure as evident. However, in line with MSG-3 paragraph 2-3-5.1, the failures should be considered 'hidden'. This leads to FEC8 or 9 analyses depending on consequence of a second failure. Those leading to FEC8 require an MRB task to be developed. Such a task is not necessary if it is considered evident through actions the crew perform during their normal duties.

Note: If there is any doubt of a functional failure being evident as a result of crew normal duties then current MSG-3 logic is applicable.

Various options have been followed by OEMs to avoid unnecessarily restrictive MRB tasks. Those OEMs that have selected tasks have either quoted the interval as 'daily' (which closely corresponds to the practice) or have taken credit for the expected crew actions and have quoted much higher intervals. In both cases the task has no value as a maintenance task. Other OEMs have taken credit for airmanship issues in another way and have declared the failure as evident. This drives FEC 6 or 7 analyses with no maintenance task being selected.

Recommendation (including Implementation):

MSG-3 should acknowledge that the flight crew perform routine actions that are not mandated through the Aircraft Flight Manual. Some of these actions allow Functional Failures to be identified. Analysts should have the possibility to declare that these actions constitute basic airmanship and thus certain Functional Failures can be declared as evident.

The validity of such decisions should be either justified through written communication with the manufacturer's Flight Operations / Training departments (with additional support from representatives of operator's Flight Crew communities in order to ensure that such actions will never cease) or be shown to be included in the minimum syllabus required by an Operational Suitability Certificate (or equivalent).

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It is proposed that the following paragraph is added in 2-3-5.1:

The MSG-3 analyst may assess that a Functional Failure is made evident by flight crew actions not mandated through the AFM providing that either:

- written confirmation is available from manufacturer's Flight Operations / Training department to confirm that such actions constitute basic airmanship and will always be performed, or**
- the actions that highlight the functional failures are part of the approved 'minimum syllabus.**

Possible examples where the revised logic might be used:

- adjustment of crew seat position
- ability to lock the crew door
- crew oxygen pressure is within limits

IMRBPB Position:

Date: 27/04/2011

Position:

MSG-3, rev 2009.1, chapter 2.3.5, states that flight crew normal duties are described in the Airplane Flight Manual (AFM). Working groups may consider these normal duties, as described in the AFM, for the purpose of categorizing failures as evident in the MSG-3 analysis.

A pre-flight inspection performed by flight crew is not part of the normal duties, as described in the AFM. Typically, the manufacturer, operator and National Airworthiness Authority develop the pre-flight inspection. As a result, the content of a pre-flight inspection can and will vary between countries of operation.

Since the pre-flight inspection is not part of the AFM, and MSG-3 only considers flight crew duties that are part of the AFM, the IMRBPB will not allow results from a pre-flight inspection to be used to categorize failures as evident in the MSG-3 analysis.

Also, since there has been many accidents attributed to sources of degradation that should have been evident during a pre-flight inspection, combined with non-standardized pre-flight inspection content/criteria, the IMRBPB will not consider amendments to the MSG-3 analysis process to allow for pre-flight inspections to become part of the flight crew normal duties.

Only flight crew duties described in the AFM may be used during the MSG-3 analysis.

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Recommendation Implementation:

Important Note: The IMRBPB positions are not policy. Positions become policy only when the policy is issued formally by the appropriate National Aviation Authority. (EASA, JAA, FAA, or TCCA)