JAA/FAA/TCCA
International MRB Policy Board
Issue Paper

Date 24/05/2005
IMRBPB # 81

Title: MSG-3 Analysis requiring that Fatigue Tasks (Airworthiness Limitation Items) be placed in the Structures Section of the Maintenance Schedule

Submitter: TCCA

Issue: The logic of MSG-3 as it is applied in the Structures Analysis at logic box P18 on the Figure 2-4-4.6. "Fatigue Damage Logic Analysis Diagram" would appear to direct that the fatigue damage tasks be recorded both within the Airworthiness Limitations Section (Box P19) as required by the Instructions for Continued Airworthiness and within the Consolidated Structural Maintenance Tasks and Intervals at logic box P20 on Figure 2-4-4.1.

Problem: During a recent MRB activity it became apparent that the performance of the FD analysis logic as presented in MSG-3 is open to interpretation. In reviewing current published MRBRs it is evident that the handling of FD in the analysis of the structural program is other than in conformity with the guidance as stated in the MSG-3 document. The norm appears to be that the manufacturer will define that structure which is damage tolerant, perform the associated FD assessment, assign the task and then present it to the SWG for assessment as to its appropriateness. The FD task is then normally published as an Airworthiness Limitation with an interim interval until such time as the fatigue testing is finished at which time the final interval is published.

Within MSG-3, provision has been made for including the FD tasks within the scheduled maintenance program as well as within the ALI section. This means that these tasks are required to be recorded in two separate places, the ALI section and the scheduled maintenance program.

This practice sets up the operator for potential problems. They may inadvertently subject the ALI to evolution or escalation as part of the base maintenance schedule. In similar areas, (CMRs) the regulatory authorities have taken a position that the CMRs may not be included in the base maintenance schedule for just such a rationale. MSG-3 itself seems to support not using a normal reliability program to escalate or adjust FD tasks, as it provides additional guidance as follows at 2-4-2 5th paragraph.

" *Inspections related to FD detection in metals are applicable after a threshold, which is established during the aircraft type certification process. At the time the fatigue related inspections are implemented, sampling can be used, where it is applicable and effective. The fatigue related inspections are based directly on the manufacturer's approved damage tolerance evaluations and changes or adjustments by the operators require use of an approved procedure."*

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Recommendation:

a) That the MSG-3 logic analysis be reviewed and amended at the next major change to remove the linkage between logic box 18 and logic box 20.
b) That the related process description found within the MSG-3 document describing how this logic should be worked be amended to direct that all FD tasks identified at Box 18 be identified as potential Airworthiness Limitations and passed to Aircraft Certification for formal approval and that they are not to be placed within the MRBR scheduled structural inspection section.
c) That the IMRBPB clarify its position with respect to including FD tasks derived from damage tolerant analysis within the MRBR.

IMRBPB Position:

October 20th, 2005

Basic principle as presented by MPIG/AIRBUS accepted, provided a final proposal compiling various comments done during IMRBPB to be sent to PB.
This IP will be close when Action Item O5/06 will be completed.

Status: Open

20/FEB/2007

Revised proposal (refer to attachment 1 and 2 dated Feb 07) reviewed and accepted by PB

Status:Closed

Important Note: The IMRBPB positions are not policy. Positions become policy only when the policy is issued formally by the appropriate National Aviation Authority.