

JAA/FAA/TCCA
International MRB Policy Board
Issue Paper

Date 24/05/2005
IMRBPB # 82

Title:	Separation of Airworthiness Limitations from Structural Inspection Requirements - PSE's vs. SSI's
Submitter:	Mark Rice, Seattle Aircraft Evaluation Group – SEA-AEG
Issue:	There is much confusion regarding the FD analysis block on Figure 2-4-4.1 and block P18 of diagram 2-4-4.6. 14 CFR part 25.571 requires manufacturers to accomplish Damage Tolerance Analysis (DTA) and speaks specifically to Principal Structural Elements (PSE's). 14 CFR part 25.1529 and Appendix H to part 25 requires clear separation between Airworthiness Limitations (ALI's) and Instructions for Continued Airworthiness (ICA's), in this case the MRBR.
Problem:	There is no mention in the logic flow-charts of how to handle SSI's which are PSE's and those which are not. The basic definition of a PSE is an element which if failed <i>would</i> lead to catastrophic failure of the airplane as opposed to an SSI who's failure <i>could</i> affect the structural integrity necessary for the safety of the aircraft. Without a clear definition and reference to PSE's in the logic flow-charts one would assume that all damage tolerant SSI's would undergo damage tolerance analysis and have an associated airworthiness limitation. The dashed arrow leading from the FD Analysis block to the Airworthiness Limitations Section, Block P19 often leads to this conclusion. All damage tolerant SSI's also get placed into the Consolidated Structural Maintenance Tasks and Intervals Section as depicted by the solid line to P20. Block P18 on Figure 2-4-4.6 leads you to this same conclusion.
Recommendation:	All SSI's should undergo DTA as they currently do. A decision block should be added from Block P3, which asks the question, "is the SSI a PSE?" If yes, a solid arrow should drive the item to the ALI section. If no, the Non-PSE SSI's should be driven to the structures section by way of MSG-3 analysis. The Damage Tolerance Analysis should be used as a basis for determining the initial structural inspection intervals. Block P18, Figure 2-4-4.6 should be changed to drive all Non-PSE tasks into the Structures section, P20.

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IMRBPB Position:

October 20th, 2005

IMRBPB consider this issue to be addressed through IP 81
See IP 81 for IMRBPB position

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. (JAA, FAA or TCCA)

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