

JAA/FAA/TCCA
International MRB Policy Board
Issue Paper

Date: 08-11-99
IMRBPB # 030
TCA 99-002

Title:	MSG-3 analysis of emergency/backup equipment.
Submitter:	Transport Canada (Mike Martin)
Issue:	The current interpretation of MSG-3 analysis is weak in dealing with emergency and backup equipment.
Problem:	<p>The current MSG-3 analysis and supporting material does not deal with the failure of emergency or backup equipment appropriately. This is very apparent in the analysis of dual-purpose items (i.e. a main passenger door that is also an emergency exit; seat cushion that is also a floatation device; etc.). When is an entry door an emergency exit? In the event of an emergency! Because the entry door is used every flight, it has been interpreted that failures to operate would be evident to the crew. The impact of a failure to open, under routine circumstances, is an inconvenience to the passengers. The same impact, in an emergency, is a catastrophe. Due to the wording of question #2, we are unable to introduce the emergency into consideration, and most failures end up being considered under a Route 6 (Evident, Operational) or 7 (Evident, Economic).</p>
Recommendation:	<p>Moubray suggests in RCM II (p.42) that any protective devices include the circumstances for which they were intended to protect. For example, he suggests using “if” or “in the event or” in the function description. This would permit the inclusion of the event into consideration, even if the functional failure were evident, and would more properly allow consideration of the worst-case situation.</p> <p>In the case of dual purpose (passenger and emergency exit) doors, two opening functions could be derived:</p> <ol style="list-style-type: none">1. To open normally2. To open in an emergency3. An emergency would not be considered ‘normal’; and therefore the functional effect, “Fails to open in an emergency” would be hidden with a safety implication. <p>Alternatively, there should be a list of safety devices/equipment/features identified. Each of them should be assessed with respect to the loss of this level of protection, with little credit being given to “alternate” items being available on the aircraft at the time.</p>

IMRBPB Position:

The IMRBPB notes that there is confusion regarding the MSG 3 analysis being accomplished on protective safety/emergency systems or components. It is recommended that ATA review Hidden Functional Failure Safety Effect 2.3.4.3., specifically the paragraph that identifies protective/emergency systems. This paragraph should be modified/enhanced to establish the necessary clarification.

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August 19, 2003

Position: IP 047 MSG-3 Analysis of Emergency Equipment supersedes this IP
Issue paper closed – Final position as stated above

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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