

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

Initial Date: 28/04/2011

IP Number: IP115

Revision / Date:

Title: Considerations addressing bonding network aspects in MSG-3 L/HIRF section.

Submitter: Joint Industry Proposal (Airbus, Boeing, Bombardier, Embraer...)

Issue: The current MSG-3 document does not provide sufficient (or precise) guidance for adequate consideration of electrical structure network / bonding features of transport aircraft with non-metal structure components.

Recommendation (including Implementation):

Note: This revision of the CIP is for initial discussion and regulatory input only, not a final decision. Changes to the text descriptions of the process may be required to support the flowchart revisions (e.g., para 2-6-1).

The MSG-3 L/HIRF logic should be revised to provide improved criteria to determine the effectiveness of dedicated tasks that require component disassembly to detect hidden degradation. It may be considered beneficial to leave the concerned assembly undisturbed unless findings from a service condition review demonstrate that action may be desirable for the fleet. It is proposed that the MSG-3 L/HIRF section should be revised as follows:

[...]

2-6-1. L/HIRF Maintenance

The scheduled maintenance must cover all identified L/HIRF protection. The majority of this protection will be covered through the Zonal Inspections. Where this Zonal maintenance will not adequately identify degradation of the L/HIRF protection, additional scheduled maintenance may be generated **provided this is effective in maintaining the long-term protection. For example, disassembly of L/HIRF Protection Components that are not intended to be disassembled could lead to degradation of the electrical bonding characteristics and therefore an electrical bonding associated task may not be applicable or effective.**

[...]

3. L/HIRF Protection Analysis Process and Flowchart (see Figure 2-6-1.3)

- 7) Select applicable and effective L/HIRF maintenance task and interval to detect degradation. Using best judgment and available information, the task and assigned interval must reduce the risk of failure to assure safe operation. **For example, disassembly of L/HIRF Protection Components that are not intended to be disassembled could lead to degradation of the electrical bonding characteristics and therefore an electrical bonding associated task may not be applicable or effective.**

Discussion of this CIP in Dallas identified that it would be beneficial to have more details on the actual task definition steps 7/14, in particular to clarify what should be addressed in regards of scheduled task to result at step 8/15 (no task identified). This sub-procedure includes considerations of disassembly, which links it with this paper intent. However, MPIG may consider to include or exclude the sub-procedure from this CIP (and potentially raise it a dedicated paper).

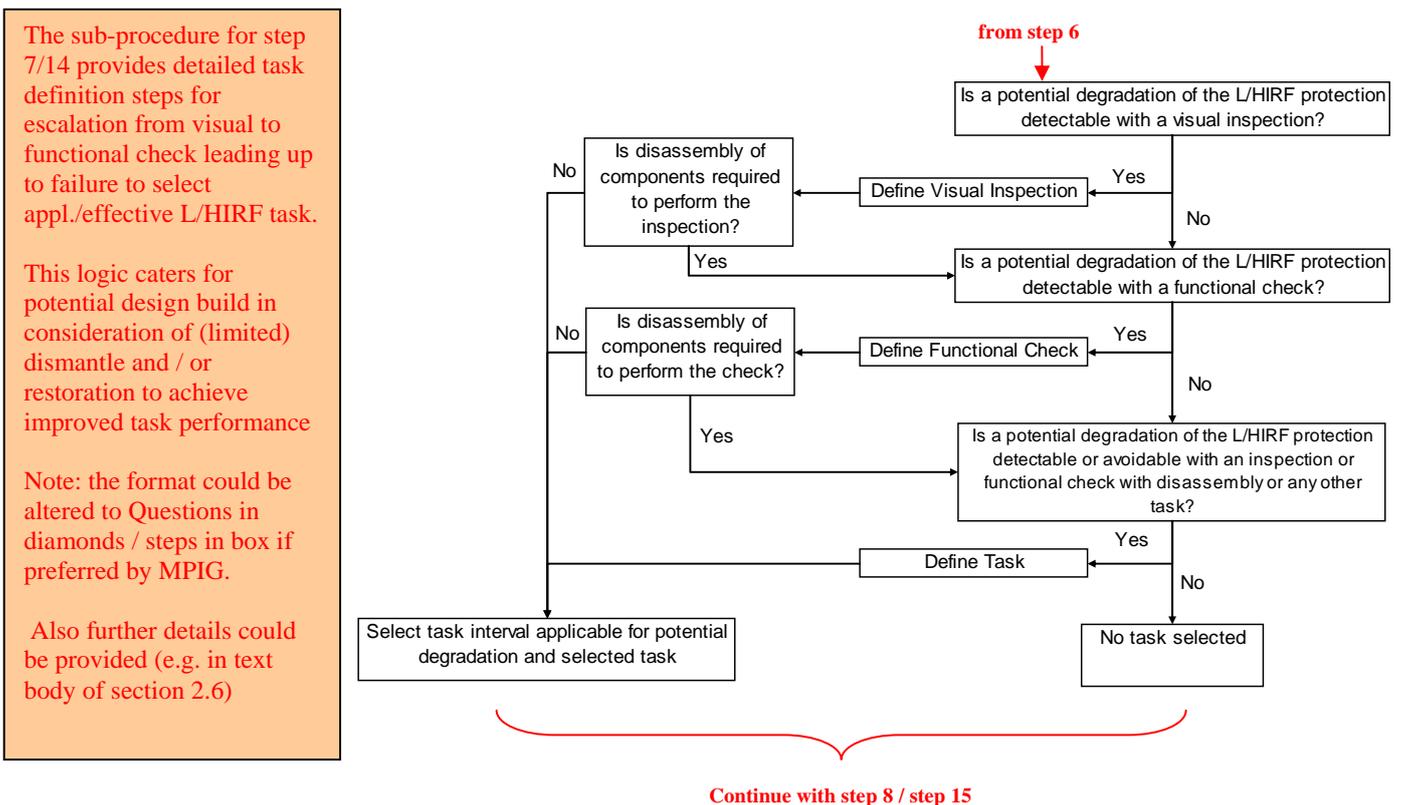
Proposed change to Figure 2-6-1.3

Add the following notion of the related sub-procedure to the top of boxes 7/14

[See Figure 2-6-1.4](#)

Proposed Figure 2-6-1.4 to be added

Figure 2-6-1.4. L/HIRF Task selection Flowchart



The sub-procedure for step 7/14 provides detailed task definition steps for escalation from visual to functional check leading up to failure to select appl./effective L/HIRF task.

This logic caters for potential design build in consideration of (limited) dismantle and / or restoration to achieve improved task performance

Note: the format could be altered to Questions in diamonds / steps in box if preferred by MPIG.

Also further details could be provided (e.g. in text body of section 2.6)

IMRBPB Position:

Date: 28/04/2011

Position:

Comments from:

**Dave Walen, Chief Scientific and Technical Advisor
Electromagnetic Interference and Lightning
FAA Aviation Safety**

“CIP IND-2010-5 lists appropriate cautions about disassembling protective devices. However, this proposal lists the issue as one related to electrical bonding networks. The concern for disassembling protective devices for inspection is a concern for any protective device. It is not unique to electrical bonding networks. And there may be cases where electrical bonding networks may require disassembly for effective inspections. So this proposal, the issue statement is narrowly defined for “electrical components”. But the proposed solution is much broader than that. I suggest that this proposal be re-scoped, either to limit it to the electrical bonding networks, or redefine the issue to all protective elements.”

This IP will remain open to allow MIPG to address the regulatory comments from the FAA.

IP 115 to be re-worked to address comments and resubmitted during the next IMRBPB meeting.

Status of Issue Paper (when closed state the closure date): open

Recommendation for 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.