

## COMMENT RESPONSE DOCUMENT

EASA PAD No. 20-057

[Published on 25 March 2020 and officially closed for comments on 22 April 2020]

**Commenter 1: Helvetic Airways – Nuno Bajouco – 06/04/2020**

### Comment # 1

Following the publication of the PAD 20-057, and on behalf of Helvetic Airways, I would like to request clarification on the following points:

Note: Helvetic Airways operates 11 Embraer ERJ 190-100 LR.

- A. The PAD applicability reflects the same applicability shown on SB 190-53-0019. In our fleet we have part of the fleet (9 of 11) with an equivalent modification factory-incorporated, as indicated in the SB 190-53-0019 (see screen shot below). Being the same modification, should these aircraft (modified in factory) be also considered on the PAD effectivity?

In-production effectivity:

Embraer 190( ) and 195( ) model aircraft SN 19000001, 19000003, 19000005, 19000175 and on have an equivalent modification factory-incorporated.

- B. The Embraer SB 190-53-0019 (modification declared not approved) has a direct impact in the MRB-1928 Revision 13 (incl. ALI) for the E190. The following tasks are related to this modification (Pre or Post Mod):

- ALI task 53-10-001-0003 - PRE SB 190-53-0019 (only EASA or TCCA)
- ALI task 53-10-001-0004 - POST SB 190-53-0019 (All)
- ALI task 53-10-001-0005 - PRE SB 190-53-0019 WFD TASK (only ANAC or FAA)

How is proposed the handling of the above tasks (current MRB Rev 13), considering the PAD required actions and effectivity? These tasks will become not effective to EASA operators with the publication of the AD.

In this context, how to consider the aircraft modified in factory?

- C. What is considered a modification of the forward pressure bulkhead in accordance with a method approved by EASA as per paragraph (3) for terminating action of the AD? Would this be the modification introduced by the SB 190-53-0019, after being submitted to EASA for approval?



**EASA response:**

- A. Comment noted, but not agreed. The SB modification is considered equivalent, but is not identical, to the production modification, both of which are EASA approved through DCA 0190-053-00077/2006EAS. The AD therefore applies only to pre-mod aeroplanes, while post-mod aeroplanes (i.e. from production line) are excluded from the Applicability.**
- B. The inspection method required by the Final AD is the one specified in current ALI task 53-10-001-0003. It is expected the new inspection method (less invasive, but with reduced threshold and interval), as identified in current ALI task 53-10-001-0005, and the related justification, will be submitted to the Agency for approval, to allow operators under EU regulations to apply that new method. This new inspection method is not EASA approved at this time. The Final AD already introduces the reduced threshold and intervals, but requires the method (task number) that was previously approved by EASA. This is considered conservative. Once the new method is approved, the AD will likely be revised or superseded accordingly. For aeroplanes modified on the production line, see EASA answer to point A. above.**
- C. Comment noted. Following additional review, it has been confirmed that the in-service modification as specified in the applicable Embraer SB has been approved by EASA, which is terminating action for the repetitive inspections. The Final AD has been amended accordingly.**
- No changes have been made to the Final AD in response to points A. and B. of this comment.**

**Commenter 2: Embraer Commercial Aviation – Luis Cobo Pimentel – 21/04/2020****Comment # 2**

Regarding to this specific PAD No.: 20-057D, the motivation is from ANAC's AD 2017-03-01 which the assessment of RBAC/14CFR 26.21 triggered additional/revised previous maintenance tasks and change to the Airworthiness Limitation Inspections due to the result of some particular aspects from Embraer's Methodology for complying with RBAC/14CFR 26.21, which was extensively discussed and agreed among Embraer, ANAC and FAA during the WFD-Rule compliance phase, which has no equivalent in EASA regulations.

Therefore, Embraer commercial aviation (Yaborã) understands that this was not due to an recently unsafe condition identified on ERJ170/190 fleet . According to compliance with regulation paragraph JAR 25.571 (ERJ 170/190 Certification Basis JAR 25 - Large Aeroplanes, Change 14, effective on May 27 1994, plus Amendment 25/96/1 (Orange Paper OP96/1) plus EASA CRI 170/A-01 ) the previous maintenance action issued and design changes associated to the discussion still valid to the EASA fleet.

- A. Further, to keep the sake of safety regulation of the ANAC's AD 2017-03-01 , We kindly suggest EASA's future AD to adopt the same wording of ANAC's AD 2017-03-01 for the "REASON" section as following:**



REASON ANAC: This AD was prompted by an evaluation by the design approval holder indicating that the forward pressure bulkhead is subjected to widespread fatigue damage. The modification required by this AD is intended to support the airplane reaching its limit of validity (LOV) of the engineering data that support the established structural maintenance program. We are issuing the AD to prevent fatigue cracking of the forward pressure bulkhead which could result in reduced structural integrity of the airplane.

Also, we would like to understand how EASA deal with other applicant's ADs related to, i.e., 14CFR 26.21 and If EASA will issue the equivalent rule to RBAC/14 CFR Part 26 subpart C.

Additional comments:

References:

[1] DCA 0170-053-00074-2006/EASA, Rev A

[2] DCA 0190-053-00077-2006/EASA, Rev A

- B. The 3rd paragraph of the Reason Section starts with: "To address this potential unsafe condition, (...)". Yaborã clarifies that ANAC AD was not triggered by an unsafe condition identified on ERJ 170/190 fleet, but it was a result of the Compliance Methodology of RBAC/14CFR §26.21, a requirement that was not issued by EASA.
- C. The 3rd paragraph of the Reason Section ends with: "At the time of release of this PAD, this modification is not approved by EASA". The modifications listed on this paragraph, namely SB 170-53-0051 and SB 190-53-0019, were applied to EASA through the DCAs reference [1] and [2], and approved by EASA on June 19th 2007 and June 21st 2007, respectively. Hence, these modifications were approved by EASA. In several other portions of the EASA PAD it is stated that this modification was not approved, but it was as explained above.
- D. The 5th paragraph of the Reason Section states that: "(...) Embraer had not submitted the modification and the inspections (...) to EASA for approval, (...)". The modification was submitted to EASA as detailed on [point C.] above. The inspections with reduced threshold and interval was not formally submitted to EASA because it refers to a Requirement not adopted by EASA, namely RBAC/14CFR §26.21. Besides that, the substantiation documents were submitted to EASA as information.
- E. The required action (1) Inspection requires an SDI inspection at the Forward Pressure Bulkhead but with the reduced intervals defined for the DET inspection. Yaborã does not agree with changing the inspection method from DET to SDI and keeping the inspection intervals defined for the SDI. Embraer provided for EASA, as information, the Technical Reports and the DCAs related to the reassessment that supported ANAC AD. These documents were not formally submitted because they are related to a requirement that was not adopted by EASA. Regardless of it, it is something intuitive for a Damage Tolerance Analyst that changes in inspection methods are followed by changes on inspection intervals and vice-versa. A method that is known to detect smaller cracks, as the SDI, allows for higher intervals. On the other hand, the smaller intervals required by the RBAC/14CFR §26.21, allowed the use of a less restrictive Inspection Method. If EASA decides to keep the inspection intervals from ANAC AD, based on RBAC/14CFR §26.21 assessment, Yaborã requires to keep the inspection method consistent.



- F. The required action (3) Modification states that the affected aircraft must incorporate a modification approved by EASA. The DCAs [1] and [2], approved by EASA in June 2007, present a Design Change that was incorporated in the Production Line to prevent crack nucleation on the Pressure Bulkhead Web. Aircraft that are out of the applicability of the EASA PAD have this modification factory-incorporated, which is recognized as approved, and have a dedicated ALI Task. Service Bulletins 170-53-0051 and SB 190-53-0019 apply the same modification for the Aircraft covered by the EASA PAD applicability. By applying the Service Bulletins an aircraft is converted into the same configuration of an “in-factory modified aircraft”.

**EASA response:**

- A. Comment noted, but not agreed. EASA admit that this is an unusual case, as under different circumstances, the ANAC AD would have been adopted by the Agency ‘as is’. Regarding regulation on WFD, that is expected to be finalised and published during 2020. However, it is EASA opinion that, since the phenomenon of WFD, if not adequately addressed/corrected, can lead to (the development of) an unsafe condition (as defined in Part 21), any WFD case may justify AD action, irrespective of whether specific WFD regulation is in place, or not.**

**Please note that for EASA, in general, WFD is considered as a fatigue issue. Hence, JAR 25.571 is applicable (JAR 25.571 at Change 14 respectively Change 15 are part of the applicable EASA Certification Bases for ERJ-170 and ERJ-190):**

[Extract from JAR 25.571 Change 14]

“(a) General. An evaluation of the strength, detail design, and fabrication must show that catastrophic failure due to fatigue, corrosion, or accidental damage, will be avoided throughout the operational life of the aeroplane. ...”

[End of extract]

**In fact, EASA has already issued multiple ADs related to WFD, the first issued being [AD 2007-0111](#).**

- B. Comment not agreed. The fact that WFD was not (yet) found in service on ERJ 170 or ERJ 190 aeroplanes, but identified by analysis, does not alter the fact that, if not corrected, it will lead to an unsafe condition for the affected group of aeroplanes.**
- C. Comment agreed. Following further review, EASA confirms that DCA 0170-053-00074-2006/EASA Rev A and DCA 0190-053-00077-2006/EASA Rev A, as provided to the Agency, define the production - as well as the retrofit modifications. It is also confirmed that the retrofit modifications, approved by EASA in the context of the above DCAs, have been made available by SB 170-53-0051 and SB 190-53-0019, respectively. The Final AD has been amended accordingly.**
- D. Comment partially agreed. As confirmed in the EASA answer to point C. above, the retrofit modifications that constitute terminating action have been approved by EASA. However, the argument that “inspections with reduced threshold and interval was not formally submitted to EASA because it refers to a Requirement not adopted by EASA” is, in EASA view, inappropriate and irrelevant. See EASA answer to point A. above. Without the DET inspection method being approved by EASA, the DET cannot replace the existing SDI.**



**E. Comment not agreed. With respect to the new inspection method, the argument that “These documents were not formally submitted because they are related to a requirement that was not adopted by EASA” is, in EASA view, inappropriate and irrelevant. See EASA answer to point A. above.**

***The inspection method required by the Final AD is the one specified in current ALI task 53-10-001-0003. It is expected that the new inspection method (less invasive, but with reduced threshold and interval) as identified by ALI task 53-10-001-0005 and the related justification will be submitted to the Agency for approval, to allow operators under EU regulations to apply that new method. This new inspection method is not approved by EASA at this time. The Final AD already introduces the reduced threshold and intervals, but requires the method (task number) that was previously approved by EASA. This is considered conservative. Once the new method is approved, the AD will likely be revised or superseded accordingly.***

***Without the DET inspection method being formally approved by EASA, the DET cannot replace the existing SDI.***

**F. Comment agreed. See EASA answer to point C. above.**

***No changes have been made to the Final AD in response to points A., B., D. and E. of this comment.***

