


<b>EASA</b>	<b>COMMENT RESPONSE DOCUMENT</b>
	<b>EASA PAD No. 12-045</b> <b>[Published on 15 May 2012 and officially closed for comments on 12 June 2012. Republished as EASA PAD 12-045R1 on 28 February 2013 and officially closed for comments on 14 March 2013]</b>

**Commenter 1: Ken Dickenson – 03 June 2012**

**Comment # 1**

**COMMENTS ON PAD 12-045:**

This PAD aims at prohibiting aeroplane operations, unless maintenance is performed before the in-service life of the aeroplane (or components thereof) reaches the airworthiness limitations specified in a revision of the Airworthiness Limitations Section (ALS) or of a document referenced in the ALS.

We expressed some concerns in our comments on the PAD 12-029 about the non-publication of the applicable aeroplane operational life. In our comments on the NPA 2011-17, we similarly emphasized the following:

**QUOTE**

Systems and mandatory scheduled ICA...

The operational life demonstrated for the aeroplane structure may, temporarily or for a longer period, be different from the one demonstrated for aeroplane systems.

Experience has shown that an aeroplane could be unintentionally operated beyond the lowest of these operational lives. The involved operator explained that the operational life for the damage-tolerant structure declared in the ALS gave the impression that the aeroplane could be operated up to this operational limit, in absence of any operational life for systems declared in the CMR document.

To address this other hazard, it appears reasonable to require the introduction in the ALS of a unique aeroplane operational life (ideally), which takes into account both structure and systems. In addition, publication in the ALS of airworthiness limitations (and associated mandatory instructions) beyond this aeroplane operational life should then be forbidden to prevent confusion: airworthiness limitations should be capped to the lowest operational life.

**Note:** A specific operational life may be necessary for some major transferable components of the aeroplane, e.g. engines, landing gears, etc... However, the use of specific operational lives should be limited as much as possible. Then, all applicable operational lives need to be published.

There is a great number of systems transferable components involved in major, hazardous or catastrophic failure conditions. Their operation beyond the demonstrated operational life has also been observed. No publication of the demonstrated operational life for systems and of traceability instructions is required by existing EASA regulations. Please note that it is not a usual practice for operators to record the component history when it is not required, although some do for some components. In other words, some systems components have been/are operated beyond their justified operational life. The compliance with CS 25.1309 may not be maintained when transferable components are operated beyond their demonstrated operational life. This also creates unnecessary risks.

The qualitative and quantitative probability terms of CS 25.1309 use the aeroplane operational life. Systems and associated components are designed to support this aeroplane operational life, but justifications may not be available for operation beyond this operational life/assumption.

It becomes apparent that it is advisable to extend the concept of LOV to the engineering data that supports the systems maintenance programme.

Conclusion on the use of an operational life...

The explanations given here above lead to the conclusion that the demonstrated operational life/lives should be published in the appropriate ICA. This could be achieved by putting the concept of Limit Of Validity into the general use, i.e. not limited to widespread fatigue damage and damage-tolerant structure. This concept should apply to the whole aeroplane structure (including safe life) and to all systems, whatever the damage sources (production flaws, fatigue of any kind, environmental damages, accidental damages, wear, etc...).

In addition, prevention of operation beyond this/these LOVs applicable to transferable elements (as listed in the ALS) should be implemented: e.g. with a warning informing ALS subscribers that operation of these elements beyond the demonstrated LOV is forbidden.

This would significantly clarify the limits of usage applicable to the published ICA.

The lack of control over operations of aeroplanes/components beyond the applicable operational life in areas contaminated by volcanic emissions is increasing hazards.

UNQUOTE

To the best of our knowledge, the A310 CMR document referenced AI/ST5/849/85 Revision 12 does not include any aeroplane operational life. This raises the following question: How operation beyond the justified operational life will be prohibited (in absence of justifications substantiating such operations) for the aeroplanes... and their components?

It could be concluded that the approved operational life or lives are airworthiness limitations to be published in the ALS. Therefore, in absence of operational life statement in the subject A310 CMR document revision, we would like to propose the following for the paragraph "Required Action(s) and Compliance Time(s)":

QUOTE

Required as indicated, unless accomplished previously.

Re-statement of DGAC France AD F-2005-123:

- Within 2 months after 20 July 2005 [the effective date of DGAC France AD F-2005-123(B)], comply with all applicable maintenance requirements and associated airworthiness limitations included in A310 CMR document referenced AI/ST5/849/85 Revision 12.

New requirements of this AD:

For A310 aeroplanes which may not previously have had to comply with DGAC AD F-2005-123, compliance with Section 3(1) of this AD is required within 2 months of the effective date of this AD.

- The approved operational life for the A310 models aeroplanes is as follows:
- A310-200 series models: xxxxx FH or xxxxx FC, whichever occurs first
- A300-300 series models: xxxxx FH or xxxxx FC, whichever occurs first

After the effective date of this AD, operation beyond the applicable operational life is prohibited.

- For A300-600 and A300-600ST aeroplanes, [...]

UNQUOTE

Conclusion: We believe that the proposal presented in the PAD 12-045 could regrettably contribute to the confusion and could potentially lead some aeroplanes to be operated beyond the operational life currently justified for the A310 systems.

**EASA response:**

**Comments are noted .**

**Yet, It seems necessary to re-emphasized that ALIs are both part of the Type Certificate (21A.41) and also the Type Design (21A.31 (a)(3)).Therefore any violation or “involuntary” deviation (claimed by the commenter(s)) to the content of the ALS entails a non-compliance of the individual aircraft to the approved Type Design. This non-compliance entails the invalidation of the aircraft individual Certificate of Airworthiness. Hence the obligation to comply with all limitations contains therein and ensure by means of appropriate means of Continuing Airworthiness management that each and every limitation is accomplished in due time as published in the AD/ALS. (See also Part M.A.302 and AMC M.A.302 (3))**

**Paragraph 2 of the Airbus A300-600 ALS Part 3 document (CMR) clearly highlights that “The CMRs are valid up to the following operational life applicable to A300-600 systems installations:”**

<b>Aircraft types Operational life</b>	<b>Flight Hours (FH)</b>	<b>Flight Cycles (FC)</b>
<b>A300-600</b>	<b>89 000 FH</b>	<b>51 000 FC</b>
<b>A300-600ST</b>	<b>63 000 FH</b>	<b>36 000 FC</b>

**The A310 ALS Part 3 has not been published yet, but the old format is still available (CMR document). When the change between CMR to ALS Part 3 will be published (expected before the end of 2012), the A310 systems installations operational life will be also be stated in that same document.**

**It is to be noted that those limits are already mentioned within the ALS Part 4 that is also a fully valid document to indicate the LOV for systems installations. The lowest LoV across all the ALS Parts is providing the maximum operational life currently certified for the complete aircraft.**

**A310 ALS part 4 mentions:**

**Quote**

**The life extension study allows continued operation of the A310 systems up to the current Limit Of Validity (LoV) i.e. 85 000 Flight Hours or 40 000 Flight Cycles, whichever occurs first.**

**Unquote**

**No changes have been made to the Final AD in response to this comment.**

**However to account for the new publication of the A310 ALS Part 3, PAD 12-045 has been revised and was re-submitted for a short consultation period.**

**Commenter 2: Catay Pacific – David CHEN – 01.03.2013**

**Comment # 2**

**COMMENT ON PAD 12-045R1:**

**Regarding this PAD, the wording in paragraph (4.2) of Required Action(s) and Compliance Time(s) on page 2/3 is “(4.2) Complying with the approved Aircraft Maintenance Programme AMP described in paragraph (43.1) of this AD”, suppose the (43.1) should be (4.1). Please check.**

***EASA response: Agreed.***

***We have amended the final AD accordingly.***