



22 October 2013

European Aviation Safety Agency  
Postfach 10 12 53  
D-50452  
Cologne, Germany

*[Submitted electronically via the EASA Comment-Response Tool]*

**SUBJECT: AIA Comments to NOTICE OF PROPOSED AMENDMENT (NPA) 2013-07  
'Ageing aircraft structures'**

---

The Aerospace Industries Association (AIA) represents manufacturers of civil aviation aircraft, engines, avionics and components in the U.S. and throughout the world. On behalf of our members, AIA has submitted detailed comments to NPA 2013-07, 'Ageing aircraft structures,' through the EASA Comment-Response Tool (CRT).

AIA respectfully requests EASA consideration of these comments which, as noted, have been individually submitted through the CRT and are also attached to this letter.

Thank you for the opportunity to comment on this Notice of Proposed Amendment. We hope these comments are both helpful and constructive to EASA's task. Please feel free to contact me if you have any questions or require additional information on these comments.

Sincerely,

A handwritten signature in blue ink, appearing to read 'George Novak', is written over a horizontal line.

George Novak

Assistant Vice President, Civil Aviation  
Aerospace Industries Association

**Comment #1 Pages: 39-67, Paragraph: Multiple**

The proposed text states:

CS 25.571 addresses damage tolerance and fatigue evaluation of structure

Requested Change:

Remove proposed changes to CS 25.571 and associated AMC material. Reconvene the industry working group to establish the benefit to the fleet and clarify non-harmonized requirements.

Justification:

More time is required to review and fully understand the potential impact on future designs and certification. The changes in the rule and associated AMC material go beyond the addition of widespread fatigue damage and Limit of Validity. These changes create further non-harmonization with 14 CFR 25.571 and 25 – 132, which have not been vetted within the industry and were not a focus of discussion at the EASA Aging Aircraft Workshop held in Cologne, Germany on April 24-25, 2013. The changes to CS 25 need to be fully understood as these changes can affect future designs.

Examples of topics that need to be explored further are:

Example 1: CS 25.571(b) (5) (pg 41)

The proposed change excludes the aerodynamic pressure from the application of the 1.15 factor. This would increase compliance costs since this isn't harmonized and it is not apparent that this difference from the existing FAA rule provides any improvement in safety.

Example 2: 3.5/Re CS 25.571(a) (5) (Pg 40)

Delete: "Inspection programmes for environmental damage and service-induced accidental damage must be established to protect the structure against catastrophic failure. "

Reason: CS 25 Appendix H and similar 14 CFR 25 Appendix H already require that the TCH provide a maintenance manual and "... an inspection programme that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the aeroplane ..."

Therefore, the requirement for these programs already exists in the EASA regulations and the EASA proposal is to introduce a redundant regulation. Those programs have historically been developed through the MSG-3 process and provided in the maintenance manuals as required by Appendix H. No compelling safety reason has been provided that justifies the inclusion of this requirement in CS 25.571 and the proposal is not harmonized. In addition, it would place additional burdens on the TCH and operators in obtaining approval for these programs and revision to these programs from multiple different organizations within the regulatory agencies that are responsible for type certification and operator maintenance programs.

Example 3: Limit of Validity Definition (pg. 45)

The proposed definition of LoV differs from the existing FAA definition by including a statement regarding "...the other elements of the fatigue and damage tolerance evaluation as provided for in the ALS..." The additions to the FAA definition appear to require additional compliance activity for fatigue and damage tolerance aspects that are met via the existing EASA compliance requirements regarding fatigue and damage tolerance, specifically, JAR 25.571 change 7 and the Supplemental Structural Inspection Document airworthiness directive for airplanes certified prior to change 7. This will drive additional cost to the industry meeting redundant compliance requirements that make no improvement in safety.

**Comment #2 Pages: General Comment, Paragraphs: Multiple**

The proposed text states:

The rule does not establish what FAA approved data will be acceptable

Requested Change:

Provide clarification as to whether previous compliance with FAA's 14 CFR 26.21, 26.43, 26.45 and 26.47 will satisfy compliance with the EASA rule or if additional data will be required to comply with EASA Requirements.

Justification:

14 CFR 26 has been in existence for a number of years and compliance plans have been put in place. The proposed requirements in the NPA would add the need for redundant compliance findings for those applicants who products have already complied with the Part 26 requirements. This would place a significant burden to the industry with no additional improvement in the safety of the fleet.

It is important to understand the level to which EASA will require evaluation and acceptance of FAA approved data.

**Comment #3 Page: 29, Paragraph: 26.300(f)**

The proposed text states:

(f) Establish a process that ensures that unsafe levels of fatigue cracking will be precluded in service. This process must include:

- (1) periodic monitoring of operational usage with comparison to design assumptions; and
- (2) a periodic assessment of the need for mandatory changes in cases where inspection alone is not reliable enough to ensure that unsafe levels of cracking are precluded.

Requested Change:

Eliminate periodic monitoring from the rule and retain it in the guidelines (i.e. part of AMC 20-20).

Justification:

Periodic monitoring of operational usage and assessing of the need for mandatory modifications 26.300(f) is problematic for manufacturers to comply due to current reporting requirements and lack of access to operators' proprietary data. TCH access to operational data is limited and there is no enforcement vehicle to require compliance from operators.

Please note the FAA considered and then removed a similar requirement from their final rule concluding that existing regulations (i.e. 14 CFR 21.3 and 121.703) require both DAHs and operators to report structural defects. The FAA concluded these requirements should be appropriate to enable us to determine whether the objectives of this final rule are being met.

**Comment #4 Page: 6, Section IV. Background Paragraph: 4**

The proposed text states:

LoV is not more than the period of time, stated as a number of total accumulated flight cycles or flight hours or both, for which it has been demonstrated that WFD is unlikely to occur in the aircraft structure; and that the inspections and other maintenance actions and procedures resulting from this demonstration and other elements of the fatigue and damage tolerance evaluation are sufficient to prevent catastrophic failure of the aircraft structure. The LoV terminology is usually used in the context of 'Limit of validity of engineering data that supports the structural maintenance programme'. The term 'structural maintenance programme' refers to the structure's part/section of the maintenance programme.

Requested Change:

Harmonize EASA definition of LoV with FAA definition, or explain the reasoning for the deviation.

FAA 14 CFR 26, Subpart C

Establish a limit of validity of the engineering data that supports the structural maintenance program (hereafter referred to as LoV) that corresponds to the period of time, stated as a number of total accumulated flight cycles or flight hours or both, during which it is demonstrated that widespread fatigue damage will not occur in the airplane. This demonstration must include an evaluation of airplane structural configurations and be supported by test evidence and analysis at a minimum and, if available, service experience, or service experience and teardown inspection results, of high-time airplanes of similar structural design, accounting for differences in operating conditions and procedures. The airplane structural configurations to be evaluated include:

- (i) All model variations and derivatives approved under the type certificate;  
and
- (ii) All structural modifications to and replacements for the airplane structural configurations specified in paragraph (b) (1) (i) of this section, mandated by airworthiness directives as of January 14, 2011.

Justification:

The EASA proposed text could be interpreted to apply LoV at the part/component level rather than airplane level. The FAA clearly stated in the preamble to 14 CFR 26.21 that "The LoV is an airplane-level number. The FAA does not anticipate that rotatable parts will be identified by design approval holders as structure susceptible to WFD." This difference in definition could result in early retirement of parts not susceptible to WFD, if total usage is not known. It poses a potential risk for inappropriately grounding fleets due to inadequate quantity of spare parts with documented usage. This will place a significant burden on the industry with no additional improvement in the safety of the fleet.

In addition, the LoV definition establishes a redundant requirement; DT of non-WFD structure is already required by SSIDs; 26.300(a); 14 CFR 25.571 amendment 45 or CS 25.571 change 7; and to repairs via 14 CFR 26.43 or CS 26.320.

**Comment #5 Page: 28 & Multiple, Paragraph: #13**

The proposed text states:

Repair evaluation guideline (REG) is a process to establish damage tolerance inspections for repairs that affect fatigue-critical structure to ensure the continued structural integrity of all relevant repaired and adjacent structure.

Requested Change:

Harmonize the EASA Repair Evaluation Guidelines (REG) definition with the FAA AASR requirement, or explain the benefits and impact of the deviation.

FAA AC120-93 Appendix 2 Definition (S)

Repair Evaluation Guidelines (REGs) provide a process to establish DTI for repairs that affect Fatigue Critical Structure

Justification:

The EASA REG is a more complex process than required by the FAA. Non-harmonized elements will require revised compliance findings that may not provide additional safety benefits.

Example 1: There are differences in airplane survey requirements in that they do not specifically exclude non-reinforcing repairs from consideration as the FAA AC 120-93 page 25 does.

AMC 20-20, 3.13.2 pg. 158

This typically excludes maintenance actions such as blend-outs, plug rivets, trim-outs, etc., unless there are known specific risks associated with these actions in specific locations.

FAA AC 120-93 Section 218

This typically excludes maintenance actions such as blend-outs, plug rivets, trim-outs, etc.

Example 2: There is lack of clarity in the NPA concerning the definition of the term adjacent structure, which is not included in either FAA requirements or guidance. The term is not clearly defined, but is used 30 times throughout the document.

AMC 20-20 Amdt 1 pg.101:

Repair Evaluation Guidelines (REG) are intended to assure the continued structural integrity of all relevant repaired and adjacent structure, based on damage tolerance principles, consistent with the safety level provided by the SSID or ALS as applied to the baseline structure. To achieve this, the REG should be developed by the TCH and implemented by the operator to ensure that an evaluation is performed of all repairs to structure that is susceptible to fatigue cracking and could contribute to a catastrophic failure.

Example 3: EASA Draft Opinion 26.370 (a)(3) requires the operator to adopt the TCH/EASA approved REG as the only available means to comply; whereas, the FAA approved REG is presented as a means to comply.

This will require TCH's to significantly revise the REG to provide guidance for possible appropriate deviations to the current text. The EASA REG should be harmonized with the FAA AASR requirement.

**Comment #6 Page: 32-33, Paragraph: 26.350 – Extension of a LoV**

The proposed text states:

The evaluation must include consideration of WFD and establish the DTI and any necessary maintenance actions required to preclude catastrophic failure up to the proposed LoV. The inspections and other maintenance actions and procedures resulting from this evaluation must be included in a revision to the ALS or a supplement to the ALS as appropriate. The ALS must address the need for all design changes and repairs on an aircraft to be substantiated before the extended LoV can be adopted in the structural maintenance programme for that aircraft...

Requested Change:

Harmonize Extended LoV with 14 CFR 26.23, or explain the reasoning for the deviation.

Justification:

The proposed rule will require a more stringent evaluation to raise the LoV than to establish the LoV initially. The different level of scrutiny is not justified and does not provide additional safety benefits; it is just based on whether it is an initial determination or a later extension. This approach will have significant financial impact by restricting the ability to raise the LoV of a fleet of airplanes.

- ☐ Extended LoV will require all changes (repairs, alterations and modification) assessment for extension.
- ☐ Extended LoV will be airplane unique number and not feasible to provide as a fleet value.

**- End of AIA Comments -**