

# **INFORMATION COLLECTION SUPPORTING STATEMENT**

## **Fatigue Tolerance Evaluation of Metallic Structures 14 CFR Part 29**

### **Notice of Proposed Rulemaking**

- 1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information. (Annotate the CFR parts/sections affected).***

Rotorcraft fatigue strength reduction or failure may occur because of aging, temperature, moisture absorption, impact damage, or other factors. Since a reduction in strength of any primary structural element (PSE) can lead to a catastrophic failure, it is important to perform fatigue tolerance evaluations.

Fatigue tolerance evaluation (FTE) provides a strength assessment of primary structural elements (PSEs). It requires the applicant to evaluate the strength of various rotorcraft components including, but not limited to rotors, rotor drive systems between the engines and the main and tail rotor hubs, controls, fuselage, fixed and movable control surfaces, engine and transmission mountings, landing gear, and their related primary attachments. Fatigue tolerance evaluations of PSEs are performed to determine appropriate retirement lives and inspections to avoid catastrophic failure during the operational life of the rotorcraft.

Advances in structural fatigue substantiation technology for metallic structures are not addressed in current regulations.

This information collection would support the increased safety requirements in the notice of proposed rulemaking. Authorized under 49 USC 44701, this proposal would revise the FTE safety requirements in 14 CFR part 29 to address advances in structural fatigue substantiation technology for metallic structures. An increased level of safety would be provided by avoiding or reducing catastrophic fatigue failures of metallic structures. These increased safety requirements would help ensure that should accidental damage occur during manufacturing or within the operational life of the rotorcraft, the remaining structure could, without failure, withstand fatigue loads that are likely to occur until the damage is detected and repaired or the part is replaced. In addition to improving the safety standards for FTE of all PSEs, the proposed amendment would lead to a harmonized international standard.

- 2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.***

To obtain type certification of a rotorcraft, an applicant must show that the rotorcraft complies with specific certification requirements. To show compliance, the applicant must submit substantiating data. FAA engineers or designated engineer representatives from industry would review the required data submittals to determine if the rotorcraft complies with the applicable minimum safety requirements for fatigue critical rotorcraft metallic structures and that the rotorcraft has no unsafe features in the metallic structures. The FAA is proposing to require an applicant to submit the compliance methodology for the FAA to assure that the rotorcraft has no unsafe fatigue characteristics.

- 3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also describe any consideration of using information technology to reduce burden.***

The FAA does not specify the means of submission. Consequently, the applicant can collect the necessary data by any means appropriate for obtaining the necessary data. Additionally, the applicant can submit the appropriate data by any means appropriate so that the FAA can evaluate the data to make a finding of compliance to the minimum certification requirements.

- 4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purpose(s) described in Item 2 above.***

No other agency is responsible for collecting information on the certification of aircraft products and parts.

The information is not available from any other source. Persons requesting certification of rotorcraft must comply with applicable airworthiness standards. The FAA is the only government agency that administers parts 27 and 29 of Title 14 of the Code of Federal Regulations. There is no duplication.

- 5. If the collection of information has a significant impact on a substantial number of small businesses or other small entities (Item 5 of the Paperwork Reduction Act submission form), describe the methods used to minimize burden.***

This request for required information does not have a substantial impact to small businesses or other small entities. The information required is the minimum needed to determine if an unsafe condition exists.

- 6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.***

The frequency of collection of this information is not a set time; it is established as needed by the respondent to meet their certification schedule. The respondent is required to submit the required information prior to type certification.

- 7. Explain any special circumstances that require the collection to be conducted in a manner inconsistent with the general information collection guidelines in 5 CFR 1320.5(d)(2).***

This collection of information is consistent with the guidelines in 5 CFR 1320.5(d)(2).

- 8. Describe efforts to consult persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported. If applicable, provide a copy and identify the date and page number of publication in the Federal Register of the agency's notice, required by 5 CFR 1320.8(d) soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.**

Under the Federal Advisory Committee Act, the proposed rule is the result of a recommendation by an ARAC Working Group. This group consisted of potential respondents and international aviation authorities. The group proposed these requirements and agreed that this collection was necessary to assure rotorcraft safety.

A 60-day notice for public comments was included in the preamble of the proposed rule, published on March 12, 2010, 75 FR 11799. Comments will be addressed in the submission with the Final Rule.

- 9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.**

There will be no payment or gift given to any respondents.

- 10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.**

The information collected is type design data and is proprietary.

- 11. Provide additional justification for any questions of sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private.**

There are no sensitive questions in this collection of information.

**12. Provide estimates of hour burden of the collection of information.**

There will be 71.7 annual certification reporting and record keeping hours. The corresponding annual inspection hours are 197.1 (see table 12-1). This results in a grand total of 268.8 hours burden for information collection. The number of respondents is 17.

<b>Table 12-1</b>	
<b>Estimated Hour Burden of Information Collection</b>	
<b>Reporting and Record Keeping</b>	
<b>Item</b>	<b># of Hours</b>
<b>Certification Reporting and Record Keeping Hours</b>	
Reporting and Record Keeping Hours Per Certification	322.5
New Certifications	6.0
Total Certification Reporting and Record Keeping Hours	1,935.0
Number of Years	27.0
<b>Annual Certification Reporting and Record Keeping Hours</b>	<b>71.7</b>
<b>Inspection Reporting and Record Keeping Hours</b>	
Reporting and Record Keeping Hours Per Inspection	1.0
Total Aircraft Inspections	5,322.0
Total Inspection Reporting and Record Keeping Hours	5,322.0
Number of Years	27.0
<b>Annual Inspection Reporting and Record Keeping Hours</b>	<b>197.1</b>
<b>Grand Total - Estimated Annual Hour Burden of Information Collection</b>	<b>268.8</b>

**13. Provide an estimate of the total annual cost burden to respondents or recordkeepers resulting from the collection of information.**

The total annual certification reporting and record keeping costs are \$7,167. The corresponding annual inspection costs are \$11,827 resulting in a grand total annual cost burden of \$18,993 (see table 13-1).

<b>Table 13-1</b>	
<b>Estimated Cost Burden of Information Collection</b>	
<b>Reporting and Record Keeping</b>	
<b>Item</b>	<b># of Hours or \$</b>
<b>Certification Reporting and Record Keeping Hours</b>	
Reporting and Record Keeping Hours Per Certification	322.5
New Certifications	6.0
Total Certification Reporting and Record Keeping Hours	1,935.0
Unit Cost (Per Hour)	\$ 100
Total Certification Reporting and Record Keeping Costs	\$ 193,500
Number of Years	27.0
Annual Certification Reporting and Record Keeping Hours	71.7
<b>Annual Certification Reporting and Record Keeping Costs</b>	<b>\$ 7,167</b>
<b>Inspection Reporting and Record Keeping Hours</b>	
Reporting and Record Keeping Hours Per Inspection	1.0
Total Aircraft Inspections	5,322.0

Total Inspection Reporting and Record Keeping Hours	5,322.0
Unit Cost (Per Inspection)	\$ 60
Total Inspection Reporting and Record Keeping Costs	\$ 319,320
Number of Years	27.0
Annual Inspection Reporting and Record Keeping Hours	197.1
<b>Annual Inspection Reporting and Record Keeping Costs</b>	<b>\$ 11,827</b>
<b>Grand Total - Annual Cost Burden</b>	<b>\$ 18,993</b>

**14. Provide estimates of annualized cost to the Federal Government. Also, provide a description of the method used to estimate cost, and other expenses that would not have been incurred without this collection of information.**

It is current practice to submit a compliance methodology to the FAA. The current §27.571(a)(1) requires that “the procedure for the evaluation must be approved” (fatigue methodology). Hence, normal category (27) certification approval requestors have the requirement, and many transport category (29) have followed this process. While this is a new requirement for part 29, historically it has been done for part 29 certification approvals. Therefore, there is little or no additional cost burden in requiring the collection of this information.

**15. Explain the reasons for any program changes or adjustments reported in Items 13 or 14 of the OMB Form 83-I.**

This is a new collection, therefore it is a program change.

**16. For collections of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.**

There are no plans for statistical publications.

**17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.**

The FAA is seeking approval to not display the expiration date. An expiration date on the rotorcraft metallic structures data is inappropriate. The required data submittals to determine if the rotorcraft complies with the applicable minimum safety requirements for fatigue critical rotorcraft and that the rotorcraft has no unsafe features in the metallic structures. The applicant must submit the required information prior to type certification, which can span a number of years. Additionally, it would not be cost effective to the applicant to destroy unused, dated stock and a burden on third parties to remove and replace dated material that would essentially be unchanged. FAA therefore, requests an exemption from placing the expiration date on the data.

**18. Explain each exception to the certification statement identified in Item 19, "Certification for Paperwork Reduction Act Submissions," of OMB Form 83-I.**

There are no exceptions.