

Supporting Statement A
Widespread Fatigue Damage
OMB 2120-0743

Abstract

The data we are collecting is still valuable and there is still a need to collect this data. This supporting Statement A is updated from the previous submission. There are two minor changes noted below since the last validation of data collection.

- The FAA is moving toward the electronic collection of data for some of its information collections and electronic signatures. However, the IT applications for this electronic collection are still being developed. We estimate that all (previously it was 10%) design approval holders and operators will submit the information electronically. (see item 3)
- This Statement A uses the Bureau of Labor Statistics (BLS)'s current 2022 rates for cost estimates. (see item 12)

1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection.

The 2010 rule requires actions to preclude widespread fatigue damage (WFD) in transport category airplanes. It applies to transport category, turbine-powered airplanes with a type certificate issued after January 1, 1958 and a maximum takeoff gross weight greater than 75,000 pounds, regardless of whether the maximum takeoff gross weight is a result of an original type certificate or a later design change. It applies to airplanes whose maximum takeoff gross weight has been decreased to 75,000 pounds or less by a design change approval for which application is made after the effective date of the rule. And it applies to all transport category airplanes to be certified in the future, regardless of maximum takeoff weight.

(1) Section 26.21 [§ 26.21(b)] requires design approval holders to establish a limit of validity (LOV) of the engineering data that supports the maintenance program for affected airplane models. This section requires design approval holders to evaluate the airplane structural configuration of each model for which they hold a type certificate to determine its susceptibility to WFD and, if susceptible, to determine that WFD would not occur before the LOV. The evaluation would be based on test data, analyses and, if available, service history, and teardown inspections of high-time airplanes. Using the results of the evaluation, the design approval holder must then establish an LOV. Although the rule allows design approval holders to establish LOVs without relying on maintenance actions, the FAA expects most current design approval holders to adopt LOVs that will rely on such actions. If they choose to establish LOVs that rely upon maintenance actions to prevent WFD before the LOV, § 26.21 requires design approval holders to identify those actions and, unless the necessary service information already exists, develop the service information in accordance with a binding schedule approved by the FAA. Those actions would then be mandated by future airworthiness directives.

Section 26.21 also requires, unless previously accomplished, that design approval holders establish an Airworthiness Limitations section (ALS) in the Instructions for Continued Airworthiness for each airplane structural configuration evaluated, incorporate the applicable LOV, and submit it to the FAA Oversight Office for approval.

Section 26.21 [§ 26.21(d)] requires that design approval holders develop and submit a compliance plan to the FAA for approval. The purpose of the compliance plan is to ensure that affected persons and the FAA have a common understanding and agreement of what is necessary to achieve compliance with these sections. The plan will also ensure that the affected persons produce an ALS and service information that is acceptable in content and format in a timely manner. Integral to the compliance plan will be the inclusion of procedures to allow the FAA to monitor progress toward compliance. These aspects of the plan will help ensure that the expected outcomes will be acceptable and on time for incorporation by the affected operators into their maintenance programs in accordance with the operational rules contained in this proposal.

(2) Sections 121.1115 and 129.115 require operators of an affected airplane to incorporate into their maintenance programs the Airworthiness Limitations section of the Instructions for Continued Airworthiness that includes an LOV for the airplane. The amendments to parts 121 and 129 have the effect of prohibiting operation of an airplane beyond its LOV¹ unless an extended LOV is approved.

(3) Section 25.571 and Appendix H require applicants of future transport airplane designs to include the LOV in the Airworthiness Limitations section of the airplane's Instructions for Continued Airworthiness. The LOV will apply regardless of how or by whom the airplane is operated.

(4) Section 26.23 allows any person to extend the LOV for an airplane if that person can demonstrate that the airplane will be free of WFD up to the extended LOV and develops a maintenance program that supports the extended limit, if necessary. The extended LOV is optional. To operate beyond the initial LOV or any subsequent LOV, the operator must incorporate the extended LOV and the associated maintenance actions into its maintenance program and may not operate the airplane beyond that limit.

This collection of information supports the DOT strategic goal of safety.

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.

¹ Under 14 CFR 91.403(c), no person may operate an airplane contrary to its applicable airworthiness limitations. By requiring operators to incorporate the LOV airworthiness limitations developed by the design approval holders under this rule, this final rule makes those LOVs applicable to the affected airplanes, and § 91.403(c) requires operators to comply with them.

Type Certificate (TC) and Supplemental Type Certificate (STC) holders would use the documentation to demonstrate to their FAA Oversight Office that they have complied with the requirement by establishing limits of validity of the engineering data that supports the maintenance program (LOVs). Operators would submit the LOV to their Principal Maintenance Inspectors. When the airplane is sold or transferred, the new owner would comply with the ALS requirements. An operator may not operate an airplane beyond its LOV unless the operator has incorporated an extended LOV and associated maintenance actions.

The compliance plan required by § 26.21(d) will be used by the FAA to assist the design approval holder in complying with its requirement. This requirement is modeled substantially on “The FAA and Industry Guide to Product Certification,” which is currently used for developing project-specific certification plans for type certification programs to ensure that the project proceeds in a timely manner and reaches its original goal. It is necessary in this instance to incorporate the LOV into operators’ maintenance programs. The design approval holder must make the LOV available to operators within a specific date. The operators’ compliance date is 12 months after the design approval holders’ compliance date. If the design approval holder has not produced the LOV by the specified compliance date, operators will not have the information they need. If the design approval holder produces the LOV 6 months late, then the operators will have only 6 months, instead of 12 months, until their specified compliance date. So the compliance plan is necessary to ensure that the design approval holder is progressing towards successful completion of the LOV and that there will be no unexpected delays to prevent its timely completion.

- 1. Whether responding to the collection is mandatory, voluntary, or required to obtain or retain a benefit.** The information or data collection is mandatory as required by the FAA regulations as specified in item 1.
- 2. Describe the entities who must respond (e.g., class 1 railroads, operators of natural gas transmission lines, etc.).** Design approval holders (both TC & STC) of transport category airplanes and operators of parts 121 and 129 are required to respond to FAA, as specified in item 1.
- 3. Whether the collection is reporting (indicate if a survey), recordkeeping, and/or disclosure.** The collection is a reporting disclosure.
- 4. Indicate collection frequency (e.g., bi-annual, annual, monthly, weekly, as needed).** The design approval holder must make the LOV available to operators within a specific date. The operators’ compliance date is 12 months after the design approval holders’ compliance date.

5. Describe the information that would be reported, maintained in records, or disclosed (e.g., information about a hazardous materials incident including location, type of hazardous material, extent of consequences, etc.). A limit of validity (LOV) of the engineering data that supports the maintenance program for affected airplane models as specified in item 1 would be reported.

6. Describe who would receive the information – DOT, first responders, the general public, etc. The FAA receives the LOV data for approval, and the operators incorporate the LOV into their maintenance programs.

7. Succinctly describe the purpose of the collection. The purpose of the data collection is for FAA oversight offices' review of the transport aircraft's maintenance program that included the LOV as required by the FAA regulations, as specified in item 1.

8. If a revision, succinctly describe the revision in the Abstract and in question 15 of the Justification document. See summary of the revisions in the Abstract.

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.

A successful electronic submission process requires actions by both the FAA and the applicant.

- The FAA and the applicant must use compatible e-signature recognition software.
- The applicant's internal security procedures must allow transmission of proprietary data electronically in a format that can be recognized by the e-signature recognition software -- some manufacturers do not believe that encrypted e-mail is sufficiently secure.
- The FAA and/or the applicant must be able to store and retrieve records (all the compliance data and FAA approvals) for the life of the airplane, which often is longer than 50 years.

The FAA has been working toward electronic submission agreements with large airplane manufacturers since Order 8000.79, Use of Electronic Technology and Storage of Data, was released in 2002; however, we do not have a suitable electronic records

retention system, we do not have a secure data transmission system that is acceptable to all applicants, and we cannot require that applicants change their internal procedures to transmit documents electronically with e-signatures rather than on paper with ink signatures -- a change in process must be voluntary on the part of the applicant. These issues have prevented electronic submission agreements so far. Most manufacturers will voluntarily e-mail or allow secure download of technical reports, service information, and similar data, but will simultaneously prepare and send hardcopy submittals with ink signatures.

We estimate that all (previously it was 10%) design approval holders and operators will submit the information electronically.

For recordkeeping, we do not require that operators keep their records in any special format.

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

These documents will be developed by TC and STC holders for operators to comply. There is no evidence of duplication because this information is not currently available elsewhere.

5. If the collection of information involves small businesses or other small entities, describe the methods used to minimize burden.

This requirement will not have a significant economic impact on a substantial number of small entities for the following reasons.

1. Entities include part 25 manufacturers; applicants for future type certificates; applicants for certain future supplemental type certificates (STCs) and amended type certificates; and part 121 and 129 operators of transport category airplanes.
2. The FAA uses the size standards from the Small Business Administration for Air Transportation and Aircraft Manufacturing, which specifies companies having less than 1,500 employees as small entities.

3. The current United States part 25 airplane manufacturers that are affected include: Boeing, Lockheed Martin, and McDonnell Douglas (a wholly-owned subsidiary of The Boeing Company). These manufacturers will incur type certificate (TC) and amended TC costs. Because all U.S. transport-aircraft category manufacturers have more than 1,500 employees, none are considered small entities.

4. Future type certificate applicants will incur additional compliance costs. But these applicants will make the choice to incur the cost only if they believe that expected revenue from additional sales will exceed the expected cost. While future STC and amended TC costs will be passed on to airplane operators, it is not possible to determine which operator will buy and install such STCs. Because expected revenue will be greater than the expected cost, the FAA believes there will not be a significant impact on a substantial number of STC applicants.

5. The FAA has determined that no part 25 manufacturers are small entities, there will not be a significant impact on a substantial number of amended TC or STC applicants, and the estimated operator compliance cost will not be significant.

The FAA provided guidance material to aid those impacted by this requirement.

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.

If the collection was not conducted or was conducted less frequently, it would be impossible for operators to comply with the rule.

7. Explain any special circumstances that would cause an information collection to be conducted in a manner:

- *requiring respondents to report information to the agency more often than quarterly;*
- *requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;*
- *requiring respondents to submit more than an original and two copies of any document;*

- *requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records, for more than three years;*
- *in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;*
- *requiring the use of a statistical data classification that has not been reviewed and approved by OMB;*
- *that includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or*
- *requiring respondents to submit proprietary trade secrets, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.*

There is only one circumstance that requires the collection to be inconsistent with these guidelines, and that is the requirement that the airplane records be maintained for the life of the airplane.

8. Provide information on the PRA Federal Register Notice that solicited public comments on the information collection prior to this submission. Summarize the public comments received in response to that notice and describe the actions taken by the agency in response to those comments. Describe the efforts to consult with 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.

A Federal Register Notice published on May 30, 2023 (88 FR 34556), solicited public comment. No comments were received. There has not been any additional means of communication outside of the Federal Registry.

9. Explain any decisions to provide payments or gifts to respondents, other than remuneration of contractors or grantees.

Not applicable.

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

Respondents are not given assurance of confidentiality. Certain records would be available through the Freedom of Information Act.

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

There are no questions of a sensitive nature.

12. Provide estimates of the hour burden of the collection of information. The statement should:

- **Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices. * If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens.**
- **Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities should not be included here. Instead, this cost should be included under item 13.**

Section 21.50 already requires that at least one complete set of Instructions for Continued Airworthiness, prepared in accordance with § 25.1529, be provided to the owner of each type aircraft. This amendment to part 26 requires that holders of design approvals for certain existing transport category airplanes establish LOVs for those airplanes. Those design approval holders are also required to revise the Airworthiness Limitations section of the Instructions for Continued Airworthiness to include the LOV.

Design approval holders have completed the initial one-time effort (spread over five years) associated with establishing LOVs and incorporating them in a new or revised Airworthiness Limitations Section (ALS). Also, many airplanes from the original 33 affected models are no longer in production or are no longer being flown by part 121 or 129 operators. As a result, there are 16 models affected by the requirements related to applicants amending type certificates after the initial compliance period.

We estimate that design approval holders will spend 20 labor hours per airplane model to submit each new or revised Airworthiness Limitations Section with the LOV incorporated to the FAA for approval. We estimate that this task will affect six models on average every year and take approximately 120 hours to complete. The corresponding average annual costs are \$11,160 (using the loaded mean hourly wage of \$93² for an aerospace engineer).

Future applicants for either supplemental type certificates (STCs) or amendments to type certificates (TCs) that decrease or increase maximum takeoff gross weights would be developing a compliance plan for the certification project. The Paperwork Reduction Act compliance for development of these certification plans is covered by OMB's previous approval of part 21. We estimate the additional burden to include information on a plan for establishing an LOV for these airplanes would be minimal.

For FAA-approved revised or new ALS, this requirement results in an annual recordkeeping and reporting burden as follows:

Summary (Annual numbers)	Reporting	Recordkeepin g	Disclosure
# of Respondents	6	0	0
# of Responses per respondent	1	0	0
Time per Response	20	0	0
Total # of responses	6	0	0
Total burden (hours)	120	0	0

We estimate 2 labor hours per airplane model to submit each revised maintenance program with the LOV to the FAA for approval. We estimate this task will take the affected operators approximately 12 hours each year. The corresponding average annual costs are \$1,116 (using the loaded mean hourly wage of \$93 for an aerospace engineer explained in footnote 2).

Other costs associated with the information collection requirements (in addition to the monetized hourly costs reflected above) are minimal.

² Mean hourly wage of Aerospace Engineers (17-2011) from BLS OEM's Occupational Employment and Wages, May 2022 is \$61.10 (<https://www.bls.gov/oes/current/oes172011.htm>). Hourly wage rate including all the benefits, also known as "loaded wage rate", is \$92.58, rounded to \$93. The loaded mean hourly wage is calculated by dividing \$61.10 with 66% obtained from the Employer Costs for Employee Compensation (ECEC) for private industry workers in transportation and warehousing industry group (https://www.bls.gov/news.release/ecec.t04.htm#ect_table4.f.1)

For FAA-approved maintenance program revision for operators, this requirement results in an annual recordkeeping and reporting burden as follows:

Summary (Annual numbers)	Reporting	Recordkeeping	Disclosure
# of Respondents	6	0	0
# of Responses per respondent	1	0	0
Time per Response	2	0	0
Total # of responses	6	0	0
Total burden (hours)	12	0	0

Documents Required to Show Compliance with the Rule	Total Average Annual Hours	Total Average Annual Cost (\$2022)
FAA-approved revised or new ALS	120	\$11,160
FAA-approved maintenance program revision for operators	12	\$ 1,116
Total	132	\$12,276

The FAA computed the annual recordkeeping (total hours) burden by analyzing the necessary paperwork requirements needed to satisfy each process. The average cost per hour varies due to the number of affected airplanes in each group, the amount of engineering time required to develop programs, and the amount of time required for each inspection.

13. Provide an estimate for the total annual cost burden to respondents or record keepers resulting from the collection of information.

There are no costs that are not already included in Question 12.

14. Provide estimates of annualized costs to the Federal government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), and any other expense that would not have been incurred without this collection of information.

FAA policy office’s engineer – 20 hours estimated to review and draft the federal register notices, updating this statement A, and coordination with other FAA oversight offices. The cost is 20 hours x \$ 93 / hour = \$1,860.

FAA oversight office’s engineer – 2 hours estimated to review and archive reports, assuming no corrective actions are required based on past data collection period, 2 hours X 6 reports = 12 hours. The cost is 12 hours x \$ 93 / hour = \$1,116.

Management Analyst - 6 hours estimated for this Statement A. The cost is 6 hours x \$76 / hour = \$456.

Economist – 1 hour estimated for this Statement A. The cost is 1 hour x \$93 / hour = \$93.

Adding the above, the total annualized costs to the Federal government is \$ 3,525.

	Mean hourly wage	Percentage factor of Employer Costs for Employee Compensation	Fully-burdened wage rate
Aerospace Engineers	\$61.1	66%	\$93
Management Analysts	\$50.32	66%	\$76
Economists	\$61.63	66%	\$93

Mean hourly wage of Aerospace Engineers from BLS OEM’s Occupational Employment and Wages, May 2022 is \$61.10 (<https://www.bls.gov/oes/current/oes172011.htm>), Management Analysts is \$50.32 (<https://www.bls.gov/oes/current/oes131111.htm>) and Economists is \$61.63 (<https://www.bls.gov/oes/current/oes193011.htm>). Hourly wage rate including all the benefits for Aerospace Engineers is \$92.58, rounded to \$93. This fully-burdened wage rate is calculated by dividing \$61.10 with 66% obtained from the Employer Costs for Employee Compensation (ECEC) for private industry workers in transportation and warehousing industry group (https://www.bls.gov/news.release/ecec.t04.htm#ect_table4.f.1).

15. Explain the reasons for any program changes or adjustments.

The FAA adjusted the hourly burden and costs to reflect that all affected design approval holders and operators have complied with the initial requirements. The wage rate for engineer costs has been updated. Operator and certificate holder saving time by combining similar efforts in the maintenance & engineering tasks.

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.

Not applicable, the FAA will not publish the information collected.

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

Approval to not display the expiration date is not requested.

18. Explain each exception to the topics of the certification statement identified in "Certification for Paperwork Reduction Act Submissions."

There are no exceptions.