AVIATION RULEMAKING ADVISORY COMMITTEE (ARAC)

Rotorcraft Issues

Meeting Minutes

Date: February 7, 2005
Time: 10:15 a.m.
Place: Anaheim, California

The Assistant Chair, Mr. John Swihart, called the meeting to order at 10:15 a.m. The attendees introduced themselves and signed the attendance sheet (Attachment 1). Mr. Swihart provided the official membership roster for everyone's review to provide any corrections needed. Mr. Mark Schilling, Assistant Executive Director, read instructions governing the conduct of the meeting, and the agenda (Attachment 2) was distributed.

Status reports and working group presentations were made as described below:

Damage Tolerance and Fatigue Evaluation of Composite Rotorcraft Structure:

Mr. Charles Harrison (FAA) provided a status of this working group (WG). The document was sent to legal review in early 2004. The WG addressed and resolved all their initial comments. In September 2004, Dick Monschke (FAA) agreed to incorporate the comments in the document and it was sent to the WG. In January 2005 the document was returned to FAA legal and the WG received a lot of comments. Some of the comments were boilerplate changes. Not all of the comments have been incorporated. Working Group wants to wait until the legal office completes its review before making any further changes to the document.

Mr. Richard Monschke reported that the WG received good input from a European member. There were some minor changes from a Civil Aviation Authority (CAA) member, a preliminary review by legal and some plain language rewrites. Some industry participants companies were closing for the holiday and did not have time to review the document. They provided comments to the WG at a later date. The comments received were not significant.

Mr. Swihart reiterated at this time that the WG would not incorporate any further comments. That they are waiting for legal to complete its review. All of the industry comments will be fully considered and the WG will review the comments to ensure there are no showstoppers. He also stated that we have lost almost three years on this document and we can't afford any further delays. Once legal's review is complete he will schedule a meeting for the WG to present its recommendations to ARAC for approval for transmittal to FAA. The meeting will be announced in the Federal Register and the meeting will probably be done via teleconference, hopefully at a minimum within 60 days.

Fatigue Evaluation of Metallic Rotorcraft Structures

Mr. Swihart began the discussion by stating that the WG has received comments from legal and that the WG is waiting on legal's response on the Advisory Circular (AC). He hopes to take a vote today on the Notice of Proposed Rulemaking (NPRM).

Mrs. Sharon Miles (FAA) reiterated that the WG does have legal's comments and that they have reached consensus with the document. The majority of their comments were editorial in nature.

Mr. Swihart stated that the NPRM was being presented to the issues group for agreement for sending to the FAA for rulemaking. He stated that industry would still have the opportunity to comment on the NPRM when it is published in the Federal Register. He gave a brief summary of the original tasking statement and asked Mrs. Miles if the WG fulfilled the task. Mrs. Miles answered yes. Mr. Swihart then stated that FAA is limited by statue to apply minimum standards. Does the NPRM meet the criteria of a minimum standard? Mrs. Miles answered yes again.

Mr. Swihart did not request a vote on the AC because legal has not completed its review. Most of the comments on the NPRM were from the U.S. industry community, none were from the European industry. Once the WG receives the comments they will be fully considered. Mr. Doug Tritsch (Skiorsky) said he didn't think that it would be difficult getting consensus on the package when the vote is taken. When the WG was reviewing the NPRM and AC he asked them to focus only on the changes and to not get caught up in the minor things.

Mr. Swihart discussed the Joint Aviation Authorities (JAA) and their role when this task started several years ago. The JAA was a part of the ARAC process then but now the JAA no longer exists and has been replaced by the European Aviation Safety Agency (EASA). Therefore, the ARAC process may be different in the future and we anticipate that we will receive comments from EASA at a later date.

Mr. Swihart opened the floor and asked if anyone had any questions or comments about the WG and the response was no. He then proposed to vote but before taking the vote he provided a summary of the tasking statement and explained that the NPRM will not be sent to FAA for rulemaking immediately because the WG is still waiting on the AC. Before this recommendation can be sent to FAA both pieces of the task have to be completed. Every member was in favor of submitting as a recommendation to FAA once the AC is complete.

FAA Status Report: Performance and Handling Qualities Requirements NPRM

Mrs. Angela Anderson (FAA) stated that the NPRM is now at FAA headquarters and will be reviewed and then put in FAA internal coordination. Mr. Tom Sandberg (AIA) expressed his concern about timeliness of the project and encouraged FAA to minimize its review. He stated that it is very frustrating to have your WG motivated about completing a task and then find out that it's delayed on the other end. He asked to please be mindful of the amount of time it has been since ARAC submitted the recommendation to FAA.

Other Business

Mr. Swihart stated that Executive Committee of the Aviation Rulemaking Advisory Committee (EXCOM) in the past met on a quarterly basis but now it meets on an annual basis because the number of rulemakings has been reduced. The majority of taskings in ARAC are items that need to be harmonized. Since the conception of EASA the terminology used is to seek regulatory cooperation, instead of harmonization. The last EXCOM meeting was in November 2004. There's a website that the public can access to see status of rulemakings in FAA.

It was asked if there was any indication from EASA if we will get the same WG members as we did when JAA was involved? Mr. Swihart stated that he didn't know but he would assume that if industry wants to continue to participate they would. Mr. Larry Kelly (FAA) added that he believes it's a sure thing and that EASA is selecting specialist to be assigned for a given project. Mr. Schilling shared that right now EASA is working on getting their basic infrastructure in place and that we should be patient while they get a new organization operational.

Mr. Alan Stewart (Transport Canada) shared with the committee that he believes there are other areas of interest that the WG needs to be tasked to research. One is the area of operation and certification. He sees a need for rules and guidance for helicopters to fly below V_{mini} (instrument flight minimum speed) in instrument flight rule (IFR) conditions and rules to conduct approaches. The machines are capable of it but the avionics are not. The other area he identified is in the area of workload assessments and maybe special conditions. Not exactly sure what's needed but the operational community needs to be able to fly down lower and the rules don't allow it at this time. He is aware of the helicopter 1309 advisory material WG that started but no longer exist and believes it needs to be resurrected. Mr. Swihart explained the ARAC process to him, that FAA proposes tasking statements to ARAC, that ARAC doesn't originate its own tasks. He told him to feel free to communicate his concerns to Mr. Schilling and Mr. Kelly for consideration of any new tasks.

Mr. Kelly stated that EASA has a rulemaking program that goes through year 2008. The rotorcraft standards staff has provided input to FAA's rulemaking program, which also goes to year 2008. He believes the V_{mini} is not currently in the rulemaking program and that he thinks it is more of an operational issue.

Mr. Swihart stated that the next rotorcraft issues group would be on February 27, 2006, in Dallas, TX. He reminded members that they will be able to access minutes to this meeting at a minimum of 30 days from February 7, 2005 on the following website: http://www.faa.gov/avr/arm/arac/calendarxml.cfm?nav=6.

The meeting adjourned at 11:05 a.m.

Attendance

24 people, including committee members, alternates, and government employees attended and 4 people called in to the February 7, 2005, Aviation Rulemaking Advisory Committee teleconference meeting on Rotorcraft Issues.

Public Notification

The Federal Register published an announcement of the meeting on January 13, 2005.

Approval

I certify the above minutes are accurate.

John Swihart

Mr. John Swihart
Assistant Chair for ARAC Rotorcraft Issues

Issued: 3-10-05

Attachments

PAGE 1/

AVIATION RULEMAKING ADVISORY COMMITTEE
ROTORCRAFT ISSUES MEETING
ANAHEIM, CALIFORNIA
February 7, 2005, 10:15 a.m.

Member (M) Non-member (NM)	Name	Affiliation	Telephone	Fax	E-mail
M	JOHN SWIHART	HAI	817-281-4169	—	jswihart@westok.net
M	Mark Schilling	FAA	817-222-5110		mark.r.schilling@faa.gov
	SHARON MILES	FAA	(817)222-5122		Sharon.Y.Miles@faa.gov
M	ALAN STEWART	TRANSPORT CANADA	(613)952-4348		stewaal@tc.gc.ca
	Derek Gordon	HAI	501-922-8153		derek@aviationsolutionsgroup
Nm	Pete Riedl	Robinson Heli	310-539-0508	310-539-5198	engineering@robinsonheli.com
Nm.	Paul Minnear.	Transport Canada.	506-851 7559	—	minnaap@tc.gc.ca.
NM	RENE LAVOIE	CHEVRONTEXACO	4032345339	4032545947	[illegible]@chevrontexaco.com
NM	DAVID YORK	HAI	703 683 4646		david.york@rotor.com
Nm	TRACY A. PERK	Air-Evac	417)256-0010		perktracy@air-evac.com
Nm	Tom Luiversbeck	AIR EVAC LIFETEAM	(417)256-0010		luiversbeckt@air-evac.com
NM	THOMAS JUDGE	AAMS	207 973 6706	207 973 6725	tjudge@ahs.emh.org
NM	AL Michaels	FAA/ AFS-300	202-267-7501	5115	albert.michaels@faa.gov
NM	ROY FOX	BELL HELICOPTER	817-280-5372	817-278-5372	RFOX@BELLHELICOPTER.TEXTRON.COM
NM (ARAC 21)	GEORGE POWELL	MARPA	480-994-3353	480-983-6794	PMAMARPA@HOTMAIL.COM

Member (M) Non-member (NM)	Name	Affiliation	Telephone	Fax	E-mail
NM	VENESSA STIGER	FAA/LA ACO	562-627-5337	562-627-5210	VENESSA.STIGER@FAA.GOV
NM	KEVIN CAFFERY	AIRBORNE LAW ENFORCEMENT ASSOC.	7166465503	7166486658	KCAIRI@AOL.COM
NM	TED DUMONT	HAI	203-878-1943	203-878-2544	Ted.Dumont@Dotto.com
NM	DAVID SULLIVAN	LGM AUSTRALIA	61-3 51480495	61-3-51480525	[illegible]@bigpond.com
NM	JEFFREY S. JONES	HERITAGE AVIATION	972-988-8000	972-660-2670	JJONES@[illegible]AVIATIONLTD.COM
NM	BARRY HATFIELD	COLUMBIA HELICOPTERS, INC	503-678-1222	503-678-5841	barryh@colhali.com
NM	Larry Kelly	FAA	817 222-5711	817 222-5722	larry.m.kelly@faa.gov.
M	TOM SANDBERG	AIA	203 386-4471	203 386 4703	TSANDBERG@SIKORSKY.COM
NM	CHARLES HARRISON	FAA	817-222-5128	817-222-5961	charles.c.harrison@faa.gov

AGENDA

ARAC RIG Meeting
Anaheim Convention Center
Room 207-B
800 West Katella Ave
Anaheim, CA 92802
(714)-765-8950
February 7, 2005, 10:15 AM-12:15 PM

Call to Order	Mr. John Swihart, Assistant Chair
Self-Introduction	All Present
Administrative Guidance	Mr. Mark Schilling, FAA
Working Group Status Reports:	
Damage Tolerance and Fatigue Evaluation of Composite Rotorcraft Structure	Mr. Charles Harrison, FAA Mr. D.J. Reddy, Working Group (WG) Chair
Discussion and approval of the Fatigue Tolerance Evaluation of Metallic Structures proposed Regulatory and Advisory Circular material package.	Mrs. Sharon Miles, FAA Mr. Doug Tritsch, WG Chair
FAA Status Report:	
Performance and Handling Qualities Requirements NPRM	Ms. Angela Anderson, FAA
Other Business	Mr. John Swihart, Assistant Chair
Future Meetings	Mr. John Swihart, Assistant Chair
Adjourn	Mr. John Swihart, Assistant Chair

Minutes of this meeting will be available 30 days after this meeting on the FAA web site at http://www.faa.gov/avr/arm/arac/calendarxml.cfm?nav=6.

[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 29

[Docket No. FAA-YYYY- ; Notice No.]

RIN 2120-

Title: Fatigue Tolerance Evaluation of Metallic Structures

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes an amendment to the airworthiness standards for fatigue tolerance evaluation (FTE) of transport category rotorcraft metallic structures. This proposal would revise the FTE safety requirements 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 serious accidental damage occur during manufacturing or within the operational life of the rotorcraft, the remaining structure could withstand fatigue loads that are likely to occur, without failure, until the damage is detected or the part is replaced. In addition to the improvement in the safety standards for FTE of all principal structural elements (PSE), the proposed amendment would be harmonized with international standards.

DATES: Send your comments on or before [Insert date 90 days after date of publication in the Federal Register].

ADDRESSES: You may send comments [identified by Docket Number *[Insert docket number, for example, FAA-200X-XXXXX]*] using any of the following methods:

- DOT Docket web site: Go to http://dms.dot.gov and follow the instructions for sending your comments electronically.
- Government-wide rulemaking web site: Go to http://www.regulations.gov and follow the instructions for sending your comments electronically.
- Mail: Docket Management Facility; US Department of Transportation, 400 Seventh Street, S.W., Nassif Building, Room PL-401, Washington, DC 20590-001.
- Fax: 1-202-493-2251.
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, S.W., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For more information on the rulemaking process, see the SUPPLEMENTARY INFORMATION section of this document.

Privacy: We will post all comments we receive, without change, to http://dms.dot.gov, including any personal information you provide. For more information, see the Privacy Act discussion in the SUPPLEMENTARY INFORMATION section of this document.

Docket: To read background documents or comments received, go to http://dms.dot.gov at any time or to Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, S.W., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Sharon Y. Miles, Regulations and Policy Group, Rotorcraft Directorate, ASW-111, Federal Aviation Administration, Fort Worth, Texas 76193-0110, telephone number (817) 222-5122; facsimile (817) 222-5961, e-mail sharon.y.miles@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments will reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. We ask that you send us two copies of written comments.

We will file in the docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. The docket is available for public inspection before and after the comment closing date. If you wish to review the docket in person, go to the address in the ADDRESSES section of this preamble between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays. You may also review the docket using the Internet at the web address in the ADDRESSES section.

Privacy Act:

Using the search function of our docket web site, anyone can find and read the comments received into any of our dockets, including the name of the individual sending the comment (or signing the comment on behalf of an association, business, labor

union, etc.). You may review DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78), or you may visit http://dms.dot.gov.

Before acting on this proposal, we will consider all comments we receive on or before the closing date for comments. We will consider comments filed late if it is possible to do so without incurring additional expense or delay. We may change these proposals based on the comments we receive.

If you want the FAA to acknowledge receipt of your mailed comments on this proposal, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it to you.

Availability of Rulemaking Documents

You can get an electronic copy using the Internet by:

(1) Searching the Department of Transportation's electronic Docket Management System (DMS) web page at http://dms.dot.gov/search;

(2) Visiting the Office of Rulemaking's web page at http://www.faa.gov/avr/arm/index.cfm; or

(3) Accessing the Government Printing Office's web page at http://www.gpoaccess.gov/fr/index.html.

You can also get a copy by submitting a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue S.W, Washington, DC 20591, or by calling (202) 267-9680. Make sure to identify the docket number, notice number, or amendment number of this rulemaking.

Authority for this Rulemaking

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements," Section 44702, "Issuance of Certificates," and Section 44704, "Type Certificates, production certificates, and airworthiness certificates." Under Section 44701, the FAA is charged with prescribing regulations and minimum standards for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. Under Section 44702, the FAA may issue various certificates including type certificates, production certificates, air agency certificates, and airworthiness certificates. Under Section 44704, the FAA shall issue type certificates for aircraft, aircraft engines, propellers, and specified appliances when the FAA finds that the product is properly designed and manufactured, performs properly, and meets the regulations and minimum prescribed standards. This regulation is within the scope of these authorities because it would promote safety by updating the existing minimum prescribed standards, used during the type certification process, to address advances in metallic structural fatigue substantiation technology. It would also harmonize this standard with international standards for evaluating the fatigue strength of transport category rotorcraft metallic primary structural elements.

Background

Statement of the Problem

Fatigue of rotorcraft dynamic components was first addressed in the 1950's by means of safe-life methodology. Historically, the application of this methodology, such as that described in AC 27-1B MG 11, has been successful in providing an adequate level of reliability for transport category rotorcraft. In addition, manufacturers currently include in their maintenance program inspections for detecting damage, such as scratches, corrosion, wear, or cracks, in addition to other routine inspections of the rotorcraft. The inspection intervals were not determined by analysis or tests, but were based on previous experience with similar designs, engineering judgment, and good design practices. This helped minimize the effect of damage in service. However, it was recognized in the 1980's that higher levels of reliability might be realized by taking into account the fatigue strength reducing effects of damage that experience has shown can occur during manufacture or in operational service. The introduction of composites led the manufacturers and regulatory authorities to develop a more robust safe-life methodology by considering the specific static and fatigue-strength reduction due to aging, temperature, moisture absorption, impact damage, and other accepted industry practices. Furthermore, where clearly visible damage resulted from impact or other sources, inspection programs were developed to maintain safety. In parallel, crack growth methodology has been successfully used for solving short-term airworthiness problems in metallic structures of rotorcraft and as the certification basis for civil and military transport aircraft applications. These advances in design, analytical methods, and other industry practices made it feasible to address certain types of damage that could result in fatigue failure. Consistent with this, the regulatory requirements of §

29.571 were substantially revised by Amendment 29-28. While many years have passed since its introduction, Amendment 29-28 has not been used often for certification of completely new rotorcraft designs, because there have been only a limited number of new rotorcraft designs since 1989, when that Amendment became effective. However, the general understanding by the rotorcraft community of rotorcraft fatigue tolerance evaluation has developed considerably in the interim. Also, there has been much discussion within the technical community about the meaning of Amendment 29-28 and the merits of the methodologies that are prescribed in it. These methodologies have been the subject of a series of meetings between the FAA, the rotorcraft industry, and the Technical Oversight Group for Aging Aircraft (TOGAA). As a result of these meetings, the industry position was documented in a White Paper entitled "Rotorcraft Fatigue and Damage Tolerance", and TOGAA made a recommendation to the FAA. TOGAA recommended that current safe-life methods be complemented by damage tolerance assessment methods and that the flaw-tolerant safe-life method, introduced in Amendment 29-28, be removed from the regulations. The rotorcraft industry White Paper, on the other hand, agreed that safe-life methods should be complemented by damage tolerance methods, but recommended retention of the flaw-tolerant safe-life method as an available option. Since both groups recommended changes, the FAA decided to consider revision of the regulations.

History

The FAA requested that the Aviation Rulemaking Advisory Committee (ARAC) study the need to revise the regulations on fatigue evaluation in light of advancements in technology and operational procedures and to develop regulatory recommendations.

The ARAC was established on February 5, 1991 by notice in the Federal Register (56 FR 2190, January 22, 1991), to assist the FAA in the rulemaking process by providing advice from the private sector on major regulatory issues affecting aviation safety. The ARAC includes representatives of manufacturers, air carriers, general aviation, industry associations, labor groups, universities, and the general public. The ARAC's formation has given the FAA additional opportunities to solicit information directly from significantly affected parties who meet and exchange ideas about proposed and existing rules that should be either created, revised, or eliminated.

Following an announcement in the Federal Register (65 FR 17936, April 5, 2000), an ARAC Working Group was chartered to study and make appropriate recommendations concerning whether new or revised airworthiness standards are appropriate regarding fatigue evaluation of transport rotorcraft metallic structures.

The working group, co-chaired by representatives from a U.S. manufacturer and a European manufacturer, included technical specialists knowledgeable in the area of fatigue evaluation of rotorcraft structures. This broad participation is consistent with FAA policy to have all known interested parties involved as early as practicable in the rulemaking process.

The working group evaluated the industry White Paper, TOGAA recommendations, and the continuing activities and results of rotorcraft damage tolerance research and development. As a result, the working group recommended changes to the fatigue evaluation requirements for transport rotorcraft found in 14 CFR § 29.571 to improve currency and understanding. The ARAC accepted those

recommendations and presented them to the FAA. This rulemaking proposal is based on those recommendations.

Statement of the Issues

Prior to Amendment 29-28, there were no requirements to consider the impact of damage on the fatigue performance of any rotorcraft structure. The strategy used to manage fatigue was limited to retirement before the probability of crack initiation became significant, and the "safe-life" method was used to establish retirement times.

It was generally agreed, based on in-service experience, that not accounting for damage could be a serious shortcoming. Accordingly, Amendment 29-28 made it a requirement to consider damage when performing fatigue evaluations unless it was demonstrated to be impractical. This amendment also prescribed two methods to account for damage and one method to be used if the use of either of those two methods was shown to be impractical. The two methods that could be used to account for damage are referred to as flaw-tolerant methods. These two methods, the "flaw-tolerant safe-life" method and the "fail-safe" method, are considered equivalent options within the context of the current § 29.571. The "flaw-tolerant safe-life" method is based on crack initiation time in a purposely "flawed" PSE and results in a retirement life. The flaw tolerant "fail-safe" method is based on a crack growth life in a purposely "flawed" PSE and results in inspection requirements. The "safe-life" method is based on a crack initiation time in a "non-flawed" PSE and results in a retirement life. Although the "safe-life" method does not explicitly account for any damage, under current § 29.571, it is the prescribed default fatigue evaluation method if the applicant establishes that neither of

the two flaw tolerant methods can be achieved within the limitations of geometry, inspectability, or good design practice.

One of the primary issues addressed by the working group was the equivalency of the two flaw-tolerant methods. While both can be used to address damage, their equivalency, from a technical perspective, is difficult to address without specific factual details.

Two concerns considered by the working group were establishing inspection requirements using the flaw-tolerant safe-life method, and establishing retirement times using the fail-safe method. While both are theoretically possible, an evaluation of the effectiveness is not possible without considering the details of a specific application. Additionally, while using the flaw-tolerant safe-life method for establishing an inspection interval is clearly not within the intent of the Amendment 29-28, the fail-safe method for establishing retirement times has been accepted as meeting its intent.

Reference Material

1. Industry White Paper "Rotorcraft Fatigue and Damage Tolerance", prepared for the TOGAA, January 1999.

2. TOGAA memo to the FAA, dated 15 March 1999.

General Discussion of Proposals

The proposals would improve the currency and clarify the intent of the rule and thereby facilitate evaluation consistency and result in equal levels of safety among applicants. Some of the more significant revisions to the current rule are summarized below.

We have determined that a descriptive phrase is needed that makes general reference to the entire fatigue process (including crack initiation, crack growth, and final failure) with or without the influence of damage. Consistent with the current rule, the words "fatigue tolerance" are proposed for this purpose. Also, we propose not to use words or phrases that have different meanings depending on their usage context (e.g. flaw-tolerant, fail-safe).

Additionally, we have determined that the current rule is too prescriptive when it directs the applicant to use specific methodologies to meet the objective. Further, we determined that the significance of the basic objective of evaluating fatigue tolerance was de-emphasized in practice because the primary focus is on means of compliance. Consequently, the entire rule has been rewritten to emphasize the basic objective and be less prescriptive as to specific methodologies. Therefore, we propose to delete all reference to specific fatigue tolerance evaluation methods (e.g. safe-life, flaw-tolerant safe-life, and fail-safe).

Further, we have determined that there are various fatigue tolerance evaluation methods used by industry; all of these methods have merit and could potentially be effective, depending on the specifics of the damage being addressed. The proposed rule requires a specific result, but does not specify the method to achieve the result. However, the proposed rule does require that all methods be validated by analysis and test and the methodology used for compliance be approved.

We have determined that, in general, the safest metallic structures use both retirements and inspections together to mitigate the risk of catastrophic failure due to

fatigue. Consequently, there is now a requirement proposed in § 29.571(g) to establish inspection and retirement times or approved equivalent means.

Also, we have determined that a key element that had to be included in the evaluation was identification of all threats that needed to be considered so damage could be quantified. Consistent with this, a specific requirement in paragraph (d)(4) is proposed to require a threat assessment.

We have recognized that an inspection approach may not be possible for some kinds of damage so a provision has been included wherein inspections need not be established if they are shown to be impractical, provided other actions are implemented to minimize the probability of the damage occurring or contributing to a catastrophic failure.

Section-by-Section Discussion of the Proposals

This proposal would revise § 29.571 as follows:

The heading of § 29.571 would be revised to read "Fatigue Tolerance Evaluation of Metallic Structures". This heading emphasizes that it applies to metallic structures.

Paragraph (a) is new and provides a general summary of the requirements. It points out that all principle structural elements (PSE) must be evaluated and, based on the results of the evaluations, appropriate actions must be established to avoid catastrophic failure. It also states that the effects of damage must be considered.

Paragraph (b) is new and requires FAA approval of the compliance methodology.

Paragraph (c) is new and requires identification of all PSE, and includes a definition of PSE.

Paragraph (d) is new and identifies the elements of each evaluation.

Paragraph (e) is new and specifically addresses residual strength assessment load requirements used to support inspection interval requirements.

Paragraph (f) is new and requires that the effect of damage on stiffness, dynamic behavior, loads, and functional performance be considered.

Paragraph (g) is new and requires that applicants for a transport category rotorcraft type certificate address the technical issue of structural metal fatigue by inspections and retirement times or approved equivalent means. It also requires this information to be included in the Airworthiness Limitations Section of the Instructions for Continued Airworthiness.

Paragraph (h) is new and requires that supplemental procedures must be established if inspections for the critical damage, as determined by a threat assessment, cannot be established within the limitations of geometry, inspectability, or good design practice.

Paperwork Reduction Act

This proposal contains the following new information collection requirements. As required by 44 U.S.C. § 3507(d) of the Paperwork Reduction Act of 1995, the FAA has submitted the information requirements associated with this proposal to the Office of Management and Budget for its review.

Title: Fatigue Tolerance Evaluation of Metallic Structures.

Summary: This proposal would revise the FTE safety requirements 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 withstand fatigue loads that are likely to occur, without failure, until the damage is detected and repaired or the part is replaced. In addition to the improvement in the safety standards for FTE of all PSE, the proposed amendment would lead to harmonized international standard.

Use of: 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 and 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.

Respondents (including number of): The likely respondents to this proposed information requirement are applicants for certification of fatigue critical metallic parts for transport category helicopters. A conservative estimate of the number of applicants affected by this rule would average 10 applicants per year.

Frequency: 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 must submit the required information prior to type certification, which can span a number of years.

Annual Burden Estimate: It is current practice to submit a compliance methodology to the FAA. Hence, there is little or no additional cost burden in requiring the collection of this information.

The agency is soliciting comments to--

(1) evaluate whether the proposed information requirement is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) evaluate the accuracy of the agency's estimate of the burden;

(3) enhance the quality, utility, and clarity of the information to be collected; and

(4) minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Individuals and organizations may submit comments on the information collection requirement by *[Insert date 60 days after publication in the Federal Register],* and should direct them to the address listed in the **ADDRESSES** section of this document. Comments also should be submitted to the Office of Information and Regulatory Affairs, OMB, New Executive Building, Room 10202, 725 17th Street, N.W., Washington, DC 20053, Attention: Desk Officer for FAA.

According to the 1995 amendments to the Paperwork Reduction Act (5 CFR 1320.8(b)(3)(vi)), an agency may not collect or sponsor the collection of information, nor may it impose an information collection requirement unless it displays a currently valid OMB control number. The OMB control number for this information collection will be published in the Federal Register, after the Office of Management and Budget approves it.

International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to comply with International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA determined that ICAO annex 8, part IV, Chapter 3, paragraph 3.8 corresponds to these proposed regulations. The proposed regulations are consistent with the ICAO standards and recommended practices.

Executive Order 12866, DOT Regulatory Policies and Procedures, Economic Assessment, Regulatory Flexibility Determination, International Trade Impact Assessment, and Unfunded Mandates Assessment

Proposed changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (19 U.S.C. §§ 2531-2533) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. And fourth, the Unfunded Mandates Reform Act of 1995 requires agencies to prepare a written assessment of the costs, benefits and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local or tribal governments, in the aggregate, or by the private sector, of $100 million or more, in any one year (adjusted for inflation.)

The FAA has made initial determinations that the least cost alternative to the proposed rule: (1) has benefits which do justify its costs, (2) does not impose costs sufficient to be considered "significant" under the economic standards for significance under Executive Order 12866 or under DOT's Regulatory Policies and Procedures, (3) would not have a significant economic impact on a substantial number of small entities, (4) would not constitute a barrier to international trade, and (5) would not constitute an unfunded mandate. The FAA has placed these analyses in the docket and summarized them below.

The proposed rule would amend Part 29 of Title 14, Code of Federal Regulations (14 CFR) to modify the regulations applicable to transport category rotorcraft structures. This proposed rule would revise the FTE safety requirements to address advances in fatigue substantiation technology for metallic structures. This proposed regulation is the result of information gathered from a review of catastrophic fatigue failures, and it is intended to improve the level of safety. The proposed rule would assure that should serious accidental damage occur during manufacturing or within the operational life of the rotorcraft, the remaining structure could withstand fatigue loads that are likely to occur, without failure, until the damage is detected and repaired or the part is replaced. In addition to improving the level of safety for FTE of all principal structural elements (PSE), the proposed rule would harmonize Federal Aviation Administration (FAA) standards with requirements by the European aviation authorities.

In the absence of a new rule, future rotorcraft metallic fatigue accidents could occur. A key benefit of the proposed rule would be avoidance of these accidents.

Summary of the Cost-Benefit Analysis

Overview of Costs and Benefits

The FAA estimates the present (2003) value of the total quantifiable safety benefits over 20 years to be about $26.4 million. In addition, the cost savings that would accrue due to harmonization of this rule would contribute to a large potential harmonization savings. The total cost over 20 years of the proposed rule is approximately $1.79 million in present or discounted cost. The fleet studied is an assumed fleet of 4 certifications, each with a ten-year production run; as described in this evaluation. Accordingly, if the rule would be more than 6.8% effective (1.79/26.4 = 0.0678), benefits would exceed costs.

The proposed rule would require rotorcraft manufacturers and operators to take additional actions including the following: (1) perform a more thorough threat assessment, (2) submit a compliance methodology report to the FAA for approval, (3) perform a more rigorous residual strength assessment, and (4) conduct inspections. It is current practice for rotorcraft manufacturers to submit voluntarily a compliance methodology report to the FAA for approval. Hence, for those applicants, there are no additional costs associated with this methodology report. The rotorcraft manufacturers currently perform a threat assessment and a residual strength assessment, but those would become more robust under the proposed rule. The current rule mandates that manufacturers establish inspection intervals or retirement times, which are included in the Airworthiness Limitation Section of the Instructions for Continued Airworthiness. The proposed rule mandates that both retirement times and inspection intervals be established and included in the Airworthiness Limitation Section of the Instructions for

Continued Airworthiness. Except for the four items discussed above, the proposed standard would not have a significant effect on U.S. manufacturer's cost compared to the current rule.

Costs

Based on information from industry representatives on the ARAC Working Group, the FAA estimates that the average additional cost to perform a more thorough threat assessment would be $100,000 per certification; the average additional cost to perform the more rigorous residual strength assessment proposed by this rule would be an additional $50,000; and putting both retirement times and inspection intervals in the airworthiness limitation section of the Instructions for Continued Airworthiness would cost on average an additional $54,000. Based on information received from industry representatives, the FAA also estimates that over the next 20 years, Part 29 rotorcraft structures will be comprised of approximately 50% metallic parts and 50% composite parts. Hence, the additional certification cost under this proposed rule would be $50,000 for a threat assessment ($100,000 * 0.5 = $50,000), $25,000 for a residual strength assessment ($50,000 * 0.5 = $25,000), and $27,000 for putting both inspection intervals and retirement times in the airworthiness limitation section ($54,000 * 0.5 = $27,000). Therefore, the FAA estimates that the total certification cost per new type certification would be $102,000 ($50,000 + $25,000 + $27,000 = $102,000). The total certification costs would be $408,000 (4 certifications at $102,000 per certification) over 20 years in undiscounted costs or about $287,573 in discounted costs (assuming a 7% discount rate).

Industry representatives on the ARAC Working Group also estimated that approximately 30 components would require additional inspection as a result of this proposal, and that it would take a mechanic one hour to inspect each component. Hence, an inspection would take 30 man-hours. At the mechanic wage rate of $60 per hour, each inspection would cost $1,800 (30 man-hours * $60 per hour = $1,800). Based on information received from industry representatives, the FAA estimates that inspections would occur on average approximately every 1250 flight hours. From 1998 - 2000, turbine rotorcraft flew an average of 412 flight hours annually. (FAA Aerospace Forecasts, Fiscal Years 2001-2012, p. VI-3; FAA Aerospace Forecasts, Fiscal Years 2002-2013, p. VI-3) Hence, inspections would occur on average about once every 3 years (1250 / 412 = 3.03).

According to the "2003 Aerospace Source Book" by Aviation Week & Space Technology (January 13, 2003), the growth of the civil helicopter market is expected to be flat for the next several years, with perhaps a few percent growth per year. According to the "FAA Aerospace Forecasts: Fiscal Years 2002-2013" (March 2002), the number of turbine powered rotorcraft is expected to total 4570 by 2013—an increase of only 100 rotorcraft over the 2000 level. Hence, the rate of new rotorcraft production is assumed to approximate the rate of rotorcraft attrition.

Representatives from Sikorsky and Bell estimated that there would be one new type certificate every 10 years for each of their respective companies. For cost estimation purposes, the FAA assumes that the new models would be certificated in years 1 and 11 during the 20-year analysis period, and that each future aircraft certification would have a production run of 10 years. The forecasted production rates

for a new Sikorsky model is taken from the forecast of units produced of the S-92 in the "World Rotorcraft Overview" (July 2002) by the Teal Group. Based on forecasted production rates for the Bell 230, 430, UH-1, 212, and 214 in the "World Rotorcraft Overview", the FAA assumes that Bell's production rate for a new model would be roughly 1.5 times that of Sikorsky's. The FAA estimates that the total inspections costs over the 20-year analysis period would be $3,825,000 (2,125 inspections at $1,800 per inspection) in undiscounted costs or about $1,507,000 in discounted costs (by applying a 7% discount rate). Therefore, the total costs of this proposed rule over 20 years is estimated to be $4,233,000 in undiscounted costs ($3,825,000 + $408,000 = $4,233,000) or about $1,795,000 in discounted costs ($1,507,165 + $287,573 = $1,794,738).

Benefits

Discounted at 7 percent annually, total potential benefits for significantly reducing the likelihood of fatigue-related accidents for Part 29 rotorcraft metallic structures amount to an estimated $26.4 million over the 20-year analysis period. In the absence of a new rule, it is likely that future fatigue-related accidents will occur on Part 29 rotorcraft in a manner similar to what has happened in the past. A key benefit of the proposed rule would be the avoidance of these accidents.

In the review of the accident and incident history, the FAA only considered accidents that were relevant to metallic rotorcraft structure fatigue problems. In addition, the FAA did not consider events in which externally aggravating circumstances existed, such as operation of the aircraft outside of its weight and balance limitations.

Databases that the FAA examined include the NTSB Aviation Accident Database & SynoPSE and the National Aviation Safety Data Analysis Center (NASDAC) database.

Since 1982, 13 accidents were identified that may have been prevented if this rule had been in effect. These accidents resulted in 12 fatalities, 5 serious injuries and 6 minor injuries. In addition, all of the aircraft involved in the accidents were either destroyed or received substantial damage.

In order to quantify future benefits, the FAA needed to calculate the costs of a future averted accident as a direct result of this proposed rule. The minimum value of a statistical aviation fatality avoided is set at $3.0 million, that of a serious injury (assumed to be the average of a severe, serious, and moderate injury) at $260,500, and that of a minor injury at $6,000. The associated medical and legal costs for a fatality is $132,700, a serious injury (assumed to be the average of a severe, serious, and moderate injury) $46,633.33, and that of a minor injury, $2,500. In addition, the average replacement cost of a destroyed turbine rotorcraft greater than or equal to 7,000 pounds is represented by a value of $1,651,000, and a NTSB accident investigation costs about $26,000. The number of fatalities, serious injuries and minor injuries represents the average number of such casualties in the thirteen accidents. Based on the above information, the FAA estimates the average value of avoiding a fatigue-related metallic rotorcraft accident is $3.8 million.

Given that thirteen accidents have occurred, without preventative action a number of accidents could occur in the future. The Poisson probability distribution provides a good model for estimating the number of "rare events" observed in a given unit of time. Using the Poisson probability distribution, the FAA estimated probabilities

associated with the projected number of future accidents (rare events) for the proposed rulemaking. Based on the Cumulative Poisson probability distribution with mean equal to 13, over the next 20 years, there is a probability of approximately 83% that there would be 10 or more accidents, and a probability of over 99% that there would be 5 or more accidents.

The present value benefit estimate assumes that the probability of an accident is equally likely in any year of the 20-year study period. If 13 accidents were avoided over the next 20 years, the present value benefit would be approximately $26.4 million. If 10 accidents were avoided over the next 20 years, the present value benefit would be approximately $20.3 million.

The benefits of the proposed regulation include the acceptance by the European aviation authorities of a harmonized standard. Such acceptance will offer the benefit of improved acceptability in European countries of products that have been certificated. The harmonized standard would increase the current standard of safety for FAA certificated rotorcraft by mandating inspections as well as retirement times. The FAA has not attempted to quantify the cost savings that may accrue due to harmonization of this rule, beyond noting that they contribute to a large potential harmonization savings. Safety under the provisions of this rule would be at least equivalent to operational safety under the previous regulations.

Comparison

The FAA estimates the discounted present value (2003) benefits of the proposed rule to be $26.4 million. In the absence of this proposed rule, it is highly likely that future fatigue-related metallic rotorcraft accidents will occur. The FAA finds that on

average 13 accidents within the fleet included in this analysis could be prevented by the enactment of this proposed rule. The benefit of the proposed rule would be the avoidance of these accidents. As previously discussed, the probability of 5 or more accidents occurring in the absence of this rule is 99%. The benefit of avoiding 5 accidents is about $10 million. Accordingly, based on this analysis, there is a 99% probability that the benefits of this proposal will exceed costs by a factor of over 5.5 (10/1.79 = 5.59). These benefits are derived from preventing accidents due to fatigue.

The FAA seeks comments with supportive justification regarding these benefit estimates. It is estimated that the discounted present value (2003) cost of the proposed rule would be $1.79 million. The cost figure above includes the cost of systems design, qualification, certification, equipment purchase and installation, testing, and inspections. The FAA seeks comments with supportive justification on these cost estimates.
The estimated $26.4 million benefits of this proposed rule far exceeds the estimated $1.79 million costs. Thus, the FAA concludes that the benefits of the proposed rule do justify the costs of the proposed 14 CFR Part 29 rule. The $26.4 million in benefits assumes that all future fatigue accidents are prevented within the aircraft produced under the 4 new certifications. Hence, if this rule is more than 6.8% effective (1.79/26.4 = 0.0678), then benefits will exceed costs.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to

regulation." To achieve that principle, the Act requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions. The Act covers a wide-range of small entities, including small businesses, not-for-profit organizations and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposed or final rule would have a significant economic impact on a substantial number of small entities. If the determination is that it would, the agency must prepare a regulatory flexibility analysis as described in the Act.

However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

The FAA believes that this proposed rule would not have a significant economic impact on a substantial number of small entities because all United States Part 29 aircraft manufacturers exceed the Small Business Administration small-entity criteria of 1,500 employees for aircraft manufacturers. Currently U.S. manufactured Part 29 aircraft type certificate holders include Sikorsky Aircraft and Bell Helicopters (a subsidiary of Textron Inc.). The operators would bear the costs of inspections. However, it is very difficult to identify who the operators would be. The FAA believes that there would be no significant economic impact on a substantial number of small operators because the operators will purchase the rotorcraft only if the additional costs can be recovered in the marketplace. Given that there are no small entity

manufacturers of Part 29 aircraft, the FAA certifies that this proposed rule would not have a significant economic impact on a substantial number of small entities.

International Trade Impact Assessment

The Trade Agreement Act of 1979 prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The FAA has assessed the potential effect of this proposed rule and determined that it would harmonize the U.S. standards with the international standards thereby lowering the costs of international trade.

Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104-4 on March 22, 1995, requires each Federal agency, to the extent permitted by law, to prepare a written assessment of the effects of any Federal mandate in a proposed or final agency rule that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more (adjusted annually for inflation) in any one year. This proposed rule does not contain a Federal intergovernmental or private sector mandate that exceeds $100 million in any year, therefore the requirements of the act do not apply.

Executive Order 13132, Federalism

The FAA has analyzed this proposed rule under the principles and criteria of Executive Order 13132, Federalism. We determined that this action would not have a

substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, we determined that this notice of proposed rulemaking would not have federalism implications.

Regulations Affecting Interstate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying regulations in Title 14 of the CFR in any manner affecting interstate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation, and to establish such regulatory distinctions as he or she considers appropriate. Because this proposed rule would apply to the certification of future designs of transport category rotorcraft and their subsequent operation, it could, if adopted, affect interstate aviation in Alaska. The FAA therefore specifically requests comments on whether there is justification for applying the proposed rule differently in interstate operations in Alaska.

Environmental Analysis

FAA Order 1050.1E identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this proposed rulemaking action qualifies for the categorical exclusion identified in paragraph 312f and involves no extraordinary circumstances.

Regulations That Significantly Affect Energy Supply, Distribution, or Use

The energy impact of the proposed rule has been assessed in accordance with the Energy Policy and Conservation Act (EPCA) Public Law 94-163, as amended (42

U.S.C. 6362) and the Department of Transportation implementing regulations, specifically 14 C.F.R. § 313.4, that defines a "major regulatory action." We have determined that this notice is not a "major regulatory action under the provisions of the EPCA. Additionally, we have analyzed this proposal under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). We have determined that it is not a "significant regulatory action" under Executive Order 12866, and it is not likely to have a significant adverse affect of the supply, distribution, or use of energy.

List of Subjects in 14 CFR Part 29

Air transportation, Aircraft, Aviation safety, Rotorcraft, Safety.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend part 29 of Title 14, Code of Federal Regulations, as follows:

PART 29 - AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY ROTORCRAFT

1. The authority citation for part 29 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701 – 44702, 44704

2. Amend § 29.571 by revising § 29.571 to read as follows:

§ 29.571 Fatigue Tolerance Evaluation of Metallic Structure.

(a) A fatigue tolerance evaluation of the principal structural elements (PSE) defined in paragraph (c) of this section must be performed and appropriate inspections and retirement time or approved equivalent means must be established to avoid catastrophic failure during the operational life of the rotorcraft. A catastrophic failure is an event that

could prevent continued safe flight and landing. The fatigue tolerance evaluation must consider the effects of both fatigue and the damage determined in paragraph (d)(4) of this section. Parts to be evaluated include PSE of the rotors, rotor drive systems between the engines and rotor hubs, controls, fuselage, fixed and movable control surfaces, engine and transmission mountings, landing gear, and their related primary attachments.

(b) The compliance methodology must be submitted to the Administrator for approval.

(c) Considering all structure, structural elements, and assemblies, the PSE must be identified. PSE are structural elements that contribute significantly to the carrying of flight or ground loads and the fatigue failure of which could result in catastrophic failure of the rotorcraft.

(d) Each evaluation required by this section must include:

(1) In-flight measurements to determine the fatigue loads or stresses for the PSE identified in paragraph (c) of this section in all critical conditions throughout the range of limitations in § 29.309 (including altitude effects), except that maneuvering load factors need not exceed the maximum values expected in operations.

(2) The loading spectra as severe as those expected in operation based on loads or stresses determined under paragraph (d)(1) of this section, including external load operations, if applicable, and other high-frequency power-cycle operations.

(3) Take-off, landing, and taxi loads when evaluating the landing gear and other affected PSE.

(4) A determination for the PSE identified in paragraph (c) of this section of the probable locations, types, and sizes of damage considering fatigue, environmental effects,

intrinsic and discrete flaws, or accidental damage that may occur during manufacture or operation.

(5) A determination of the fatigue tolerance characteristics for the PSE with the damage identified in paragraph (d)(4) of this section that supports the inspection and retirement times, or other approved equivalent means.

(6) Analyses supported by test evidence and, if available, service experience.

(e) A residual strength determination is required to establish the allowable damage size. For inspection interval determination based on damage growth, the residual strength evaluation must show that the remaining structure after damage growth is able to withstand design limit loads without failure within its operational life.

(f) The effect of damage on stiffness, dynamic behavior, loads and functional performance must be considered.

(g) Based on the requirements of this section, inspections and retirement times or approved equivalent means must be established to avoid catastrophic failure. The inspections and retirement times or approved equivalent means must be included in the Airworthiness Limitation Section of the Instructions for Continued Airworthiness required by Section 29.1529 and Section A29.4 of Appendix A of this part.

(h) If inspections for any of the damage types identified in paragraph (d)(4) of this section cannot be established within the limitations of geometry, inspectability, or good design practice, then supplemental procedures, in conjunction with the retirement time, must be established that will minimize the risk of each of these types of damage being present or leading to a catastrophic failure during the operational life of the rotorcraft.

Issued in Washington, DC, on

[Name of Office Director]

[Title of Office Director]

[Name and title of the individual signing the NPRM. Generally, the OPI director. If the individual signing the NPRM is "acting" for another individual, this must be noted in the signature block.]

altitude allowable after engine rotorburst.

[FR Doc. 05–751 Filed 1–12–05; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Summary Notice No. PE–2005–06]

Petitions for Exemption; Summary of Petitions Received

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of petition for exemption received.

SUMMARY: Pursuant to FAA's rulemaking provisions governing the application, processing, and disposition of petitions for exemption, part 11 of Title 14, Code of Federal Regulations (14 CFR), this notice contains a summary of certain petitions seeking relief from specified requirements of 14 CFR. The purpose of this notice is to improve the public's awareness of, and participation in, this aspect of FAA's regulatory activities. Neither publication of this notice nor the inclusion or omission of information in the summary is intended to affect the legal status of any petition or its final disposition.

DATES: Comments on petitions received must identify the petition docket number involved and must be received on or before February 2, 2005.

ADDRESSES: You may submit comments identified by DOT DMS Docket Number FAA–2004–19090 by any of the following methods:

- *Web Site: http://dms.dot.gov.* Follow the instructions for submitting comments on the DOT electronic docket site.
- *Fax:* 1–202–493–2251.
- *Mail:* Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL–401, Washington, DC 20590–0001.
- *Hand Delivery:* Room PL–401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Docket: For access to the docket to read background documents or comments received, go to *http://dms.dot.gov* at any time or to Room PL–401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: John Linsenmeyer (202) 267–5174 or Susan Lender (202) 267–8029, Office of Rulemaking (ARM–1), Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591.

This notice is published pursuant to 14 CFR 11.85 and 11.91.

Issued in Washington, DC, on January 7, 2005.

Anthony F. Fazio,

Director, Office of Rulemaking.

Petition for Exemption

Docket No.: FAA–2004–19090.

Petitioner: 4/Flight Industries.

Sections of 14 CFR Affected: 14 CFR 21.325(b)(3) and 21.601(c).

Description of Relief Sought: To allow the petitioner to issue export airworthiness approvals for their product manufactured and located at their facility in Montreal, Canada. The exemption would also permit issuance of Technical Standard Order (TSO) authorizations for products manufactured at facilities located outside the United States.

[FR Doc. 05–753 Filed 1–12–05; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Aviation Rulemaking Advisory Committee Meeting on Rotorcraft Issues

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of public meeting.

SUMMARY: This notice announces a public meeting of the FAA's Aviation Rulemaking Advisory Committee to discuss rotorcraft issues.

DATES: The meeting will be held on February 7, 2005, 10:15 a.m. to 12:15 p.m. P.s.t.

ADDRESSES: The meeting will be held at the Anaheim Convention Center, Room 207–B, 800 West Katella Avenue, Anaheim, CA 92802, phone (714) 765–8950.

FOR FURTHER INFORMATION CONTACT: Angela Anderson, Office of Rulemaking, ARM–200, FAA, 800 Independence Avenue, SW, Washington, DC 20591, telephone (202) 267–9681.

SUPPLEMENTARY INFORMATION: The referenced meeting is announced pursuant to Section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463; 5 U.S.C. App. II).

The agenda will include:

a. Discussion and approval of the Fatigue Tolerance Evaluation of Metallic Structures proposed Regulatory and Advisory Circular material package.

b. Working Group Status Report: Damage Tolerance and Fatigue Evaluation of Composite Rotorcraft Structure.

c. FAA Status Report: Performance and Handling Qualities Requirements Notice of Proposed Rulemaking.

Attendance is open to the public but will be limited to the space available. The public must make arrangements to present oral statements at the meeting. Written statements may be presented to the committee at any time by providing 16 copies to the Assistant Chair or by providing the copies at the meeting.

Approximately thirty days after the meeting, minutes will be available on the FAA Web site at *http://www.faa.gov/avr/arm/arac/calendarxml.cfm?nav=6.*

If you are in need of assistance or require a reasonable accommodation for the meeting, please contact the person listed under the heading **FOR FURTHER INFORMATION CONTACT.** In addition, sign and oral interpretation, as well as a listening device, can be made available at the meeting if requested 10 calendar days before the meeting. You may make arrangements by contacting the person listed under the heading **FOR FURTHER INFORMATION CONTACT.**

If you are unable to attend the meeting, you can access it by telephoning 817–222–4871, pass code 5359#.

Issued in Washington, DC, on January 7, 2004.

Anthony F. Fazio,

Executive Director, Aviation Rulemaking Advisory Committee.

[FR Doc. 05–658 Filed 1–12–05; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Motor Carrier Safety Administration

[Docket No. FMCSA–2003–15015]

Policy on Availability of Information From the Commercial Driver's License Information System

AGENCY: Federal Motor Carrier Safety Administration (FMCSA), DOT.

ACTION: Notice of policy.

SUMMARY: As required by the Transportation Equity Act for the 21st Century (TEA–21), this document informs the public of FMCSA's policy regarding access to information in the Commercial Driver's License Information System (CDLIS) by other Federal agencies.

EFFECTIVE DATE: This policy is effective January 13, 2005.