Federal Aviation Administration – Regulations and Policies
Aviation Rulemaking Advisory Committee

Rotorcraft Issue Area
Critical Parts Working Group
Task 1 – Critical Parts

Task Assignment

[Federal Register: January 20, 1995 (Volume 60, Number 13)]
[Notices]
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DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration

Aviation Rulemaking Advisory Committee; Critical Parts Working Group

AGENCY: Federal Aviation Administration (**FAA**), DOT.

ACTION: Notice of establishment of the Critical Parts Working Group.

SUMMARY: Notice is given of the Critical Parts Working Group and new tasks assigned to the Aviation Rulemaking Advisory Committee (ARAC). This notice informs the public of the activities of ARAC.

FOR FURTHER INFORMATION CONTACT:
Mr. Mark Schilling, Manager, Rotorcraft Standards Staff, 2601 Meacham Boulevard, Fort Worth, Texas, telephone number (817) 222-5110.

SUPPLEMENTARY INFORMATION: The Federal Aviation Administration (**FAA**) has established an Aviation Rulemaking Advisory Committee (ARAC) (56 FR 2190, January 22, 1991; and 58 FR 9230, February 19, 1993). One area the ARAC deals with is rotorcraft issues. These issues involve the airworthiness standards for normal and transport category rotorcraft in parts 27 and 29 of the Federal Aviation Regulations, which are the responsibility of the Director, Aircraft Certification Service, **FAA**.

Task

The Critical Parts Working Group is charged with recommending to ARAC new or revised requirements for a critical parts plan that would control the design, substantiation, manufacture, maintenance, and modification of critical parts. The products of this exercise are intended to be harmonized standards, acceptable to both the **FAA** and the Joint Aviation Authorities.

Specifically, the task is as follows:

Reveiw Title 14 Code of Federal Regulations, parts 27 and 29, and supporting policy and guidance material for the purpose of determining the course of action to be taken for rulemaking and/or policy relative to the issue of identification of the critical parts for consideration under design, production and maintenance, according to a critical part plan to be prepared by the manufacturer. Consider adding new Section 27.602 and 29.602 to Title 14.

ARAC recommendations to the **FAA** should be accompanied by appropriate documents. Recommendations for rulemaking should be accompanied by a complete draft of the notice(s) of proposed

rulemaking, including the benefit/cost analysis and other required analyses. Recommendations for the issuance of guidance material should be accompanied by a complete draft advisory circular.

ARAC working groups are comprised of technical experts on the subject matter. A working group member need not necessarily be a representative of one of the member organizations of ARAC. An individual who has expertise in the subject matter and wishes to become a member of the working group should write the person listed under the caption FOR FURTHER INFORMATION CONTACT expressing that desire, describing his or her interest in the task, and the expertise he or she would bring to the working group. The request will be reviewed by the assistant chair and working group leader, and the individual will be advised whether or not the request can be accommodated.

Working Group Reports

Each working group formed to consider ARAC tasks are expected to comply with the procedures adopted by ARAC and given to the working group chair. As part of the procedures, the working group is expected to:

A. Recommend time line(s) for completion of the task, including rationale, for consideration at the meeting of the ARAC to consider rotorcraft issues held following publication of this notice.

B. Give a detailed conceptual presentation on the task to the ARAC before proceeding with the work stated under item C below.

C. Give a status report on the task at each meeting of ARAC held to consider rotorcraft issues.

The Secretary of Transportation has determined that the formation and use of the ARAC are necessary in the public interest in connection with the performance of duties imposed on the **FAA** by law. Meetings of ARAC will be open to the public except as authorized by section 10(d) of the Federal Advisory Committee Act. Meetings of the Critical Parts Working Group will not be open to the public, except to the extent that individuals with an interest and expertise are selected to participate. No public announcement of working group meetings will be made.

Issued in Washington, DC, on January 13, 1995.

Chris A. Christie,

Executive Director, Aviation Rulemaking Advisory Committee.

[FR Doc. 95-1547 Filed 1-19-95; 8:45 am]
BILLING CODE 4910-13-M

Recommendation Letter

Any desired responses
should be directed to:
1101 Naugatuck Avenue
Milford,CT 06460
Tel: 203-878-1943
Fax: 203-878-2544

Helicopter Association International

1619 Duke Street, Alexandria, Virginia 22314-3406 Telephone: 703/683-4646 Telex: 89-615

June 8,1993

Mr.Anthony J. Broderick
Associate Administrator for Regulation and Certification (AVR-1)
Federal Aviation Administration
800 Independence Avenue,SW
Washington,DC 20591

Dear Mr.Broderick:

The Occupant Restraint Working Group of the Aviation Rulemaking Advisory Committee (ARAC) has completed the tasks assigned, as published in the "Federal Register" of December 4,1991. Accordingly, the ARAC submits herewith the resulting recommendations for changes to FAR Parts 27 and 29. These proposed changes were approved by the ARAC in conference on May 18,1993.

The recommendation package enclosed consists of:

- a draft Notice of Proposed Rulemaking (NPRM),
- an Executive Summary prepared by the Manager, Rotorcraft Directorate (ASW-100) with the concurrence of the Assistant General Counsel (ASW-7), and
- the "Preliminary Regulatory Evaluation, Initial Regulatory Flexibility Determination, and Trade Impact Assessment" for the above referenced draft NPRM.

The draft NPRM has also been coordinated with and supported by the Joint Airworthiness Authority through its representative to the ARAC for the consideration of this issue.

Therefore, it is requested that the draft NPRM be processed for publication.

Very truly yours,

T.E.Dumont
Assistant ARAC Chair for Rotorcraft Issues

cc: John O'Brien, Chair,ARAC
Chris A. Christie, Executive Director,ARAC
James D. Erickson, Manager, Rotorcraft Directorate
Eric Bries, Assistant ARAC Executive Director for Rotorcraft Issues
Robert E. Warren, Chair, ARAC Occupant Restraint Working Group
Frank L. Jensen,Jr., President, HAI

Acknowledgement Letter

U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

JUN 21 1993

Mr. T. E. Dumont
Assistant Chair for Rotorcraft Issues
Aviation Rulemaking Advisory Committee
Helicopter Association International
Milford, CT 06460

Dear Mr. Dumont:

Thank you for your June 8 letter with which you transmitted a recommendation of the Aviation Rulemaking Advisory Committee on Rotorcraft Issues. You have requested that the notice of proposed rulemaking (NPRM) concerning Airworthiness Standards; Occupant Protection in Normal and Transport Category Rotorcraft, be processed for publication. The Federal Aviation Administration (FAA) accepts this recommendation provided there are no legal or other reasons why we cannot adopt it.

The complete rulemaking package will be reviewed and coordinated within the FAA and the Offices of the Secretary of Transportation and Management and Budget. The FAA will publish the NPRM for public comment as soon as the coordination process is complete. We will make every effort to handle this recommendation expeditiously.

I would like to thank the Aviation Rulemaking Advisory Committee on Rotorcraft Issues, and particularly the Occupant Restraint Working Group, for its prompt action on the task the FAA imposed at the committee's initial meeting on rotorcraft issues held September 25, 1991.

Sincerely

Anthony J. Broderick
Associate Administrator for
Regulation and Certification

Recommendation

[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 27 and 29

[Docket No. ; Notice No.]

RIN

Harmonization of Critical Parts Rotorcraft Regulations

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This notice proposes changes to the type certification requirements for both normal and transport category rotorcraft. The changes would amend the airworthiness standards to define critical parts and to require a critical parts plan. The critical parts plan would establish procedures that would require the control of the design, substantiation, manufacture, maintenance, and modification of critical parts.

DATES: Comments must be received on or before [insert date 90 days after date of publication in the Federal Register].

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Office of the Chief Counsel, Attention: Rules Docket (AGC-200), Docket No. ; Room 915G, 800 Independence Avenue SW, Washington, DC 20591. Comments submitted must be marked Docket No. Comments may also be sent electronically to the following internet address:

9-nprm-cmts@faa.dot.gov. Comments may be examined in Room 915G weekdays between 8:30 a.m. and 5:00 p.m., except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Carroll Wright, Rotorcraft Directorate, Aircraft Certification Service, Regulations Group, FAA, Fort Worth, Texas 76193-0111, telephone number (817) 222-5120.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Comments relating to the environmental, energy, federalism, or economic impact that might result from adopting the proposals in this notice are also invited. Substantive comments should be accompanied by cost estimates. Comments must identify the regulatory docket or notice number and be submitted in triplicate to the Rules Docket at the address specified under the caption "ADDRESSES."

All comments received, as well as a report summarizing each substantive public contact with FAA personnel on this rulemaking, will be filed in the docket. The docket is available for public inspection before and after the comment closing date.

All comments received on or before the closing date will be considered before taking action on this proposal. Late-filed comments will be considered to

the extent practicable. The proposals contained in this notice may be changed in light of the comments received.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a preaddressed, stamped postcard on which the following statement is made: "Comments to Docket No. " The postcard will be date stamped and mailed to the commenter.

Availability of NPRM's

Using a modem and suitable communications software, an electronic copy of this document may be downloaded from the FAA regulations section of the Fedworld electronic bulletin board service (telephone: 703-321-3339), the Federal Register's electronic bulletin board service (telephone: 202-512-1661), or the FAA's Aviation Rulemaking Advisory Committee Bulletin Board service (telephone: 202-267-5948).

Internet users may reach the FAA's web page at http://www.faa.gov or the Federal Register's webpage at http://www.access.gpo.gov/su_docs for access to recently published rulemaking documents.

Any person may obtain a copy of this NPRM by submitting a request to the FAA, Office of Rulemaking, ARM-1, 800 Independence Avenue, SW, Washington, DC 20591, or by calling (202) 267-9680. Communications must identify the notice number of this NPRM.

Specifically, the task is as follows:

> Review Title 14 Code of Federal Regulations, parts 27 and 29, and supporting policy and guidance material for the purpose of determining the course of action to be taken for rulemaking and/or policy relative to the issue of identification of the critical parts for consideration under design, production and maintenance, according to a critical parts plan to be prepared by the manufacturer. Consider adding new Section 27.602 and 29.602 to Title 14.

The working group included representatives from the major rotorcraft manufacturers (normal and transport) and representatives from Aerospace Industries Association of America, Inc. (AIA), Association Europeene des Constructeurs de Material Aerospatial (AECMA), Transport Canada Aviation, JAA, the FAA Rotorcraft Directorate, and other interested parties. This broad participation is consistent with FAA policy to involve all known interested parties as early as practicable in the rulemaking process.

The working group presented its findings to the ARAC, which recommended to the FAA that a critical parts section be added to the airworthiness standards for both 14 CFR parts 27 and 29 (parts 27 and 29).

The FAA has evaluated the ARAC recommendations and proposes the changes contained in this notice.

General Discussion of the Proposals

The objective of identifying critical parts is to ensure that critical parts are controlled during design, substantiation, manufacture, and throughout their service life so that the risk of failure in service is minimized by ensuring that the

critical parts maintain their critical characteristics on which certification is based. Although manufacturers currently have various methods to control critical parts, this proposal would require that the control process be formalized and submitted as part of the type certification process. This proposal to address critical parts in the regulations would apply to parts 27 and 29. A critical part would be defined as a part, the failure of which could have a catastrophic effect upon the rotorcraft, and for which critical characteristics have been identified which must be controlled to ensure the required level of integrity. The use of the word "could" in §§ 27.602(a) and 29.602(a) of the rule means that this failure assessment should consider the effect of flight regime (i.e., forward flight, hover, etc.). The operational environment need not be considered. The term "catastrophic" means the inability to conduct an autorotation to a safe landing, without exceptional piloting skills, assuming a suitable landing surface.

Paperwork Reduction Act

There are no requirements for information collection associated with this proposed rule that would require approval under the Paperwork Reduction Act of 1995 (44 U.S.C. § 3507(d)).

Regulatory Evaluation Summary

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 effect of regulatory changes on small entities. Third, the Office of Management and Budget directs agencies to assess the effects of regulatory changes on international trade. In conducting these analyses, the FAA has determined that this rule: (1) will generate benefits that justify its costs and is not a "significant regulatory action" as defined in the Executive Order; (2) is not significant as defined in DOT's Regulatory Policies and Procedures; (3) will not have a significant impact on a substantial number of small entities; and (4) will not constitute a barrier to international trade. These analyses, available in the docket, are summarized below.

Cost/Benefit Analysis

The FAA estimates that any costs associated with the proposed rule would be negligible. Rotorcraft manufacturers already have many requirements (e.g., §§ 21.31, 21.33, 21.50, 21.139, 21.143, 27.1529, and 29.1529) to ensure the safety of the design manufacture, maintenance, inspection, and overhaul of rotorcraft parts. All manufacturers have some procedures in place to identify and control "critical parts," which may be called "flight safety parts," "critical parts," "vital parts," or "identifiable parts." This proposed rule would merely formalize these procedures into a Critical Parts Plan.

The JAA has indicated that it will amend the Joint Aviation Requirements (JAR's) by adopting the requirements in proposed §§ 27.602 and 29.602. The benefits of the proposed rule would be the formalization of the current critical

parts procedures to make them mandatory and the harmonization of the JAA and the U.S. requirements.

Initial Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily or disproportionately burdened by government regulations. The RFA requires a Regulatory Flexibility Analysis if a proposed rule would have a significant economic impact, either detrimental or beneficial, on a substantial number of small entities. FAA Order 2100.14A, Regulatory Flexibility Criteria and Guidance, establishes threshold costs and small entity size standards for complying with RFA requirements. Because this proposed rule formalizes existing requirements and current practices and would result in no more than negligible costs to rotorcraft manufacturers, the FAA has determined that it would not have a significant impact on a substantial number of small entities and a Regulatory Flexibility Analysis is not required.

International Trade Impact Assessment

The proposed rule would not constitute a barrier to international trade, including the export of American rotorcraft to foreign countries or the import of foreign rotorcraft into the United States. The JAA will harmonize their requirements with those in this proposed rule. There would be no cost (or cost savings) advantage to persons in either the United States or to JAA member countries.

Unfunded Mandates Reform Act

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. Section 204(a) of the Act, 2 U.S.C. 1534(a), requires the Federal agency to develop an effective process to permit timely input by elected officers (or their designees) of State, local, and tribal governments on a proposed "significant intergovernmental mandate." A "significant intergovernmental mandate" under the Act is any provision in a Federal agency regulation that will impose an enforceable duty upon State, local, and tribal governments, in the aggregate, of $100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533, which supplements section 204(a), provides that before establishing any regulatory requirements that might significantly or uniquely affect small governments, the agency shall have developed a plan that, among other things, provides for notice to potentially affected small governments, if any, and for a meaningful and timely opportunity to provide input in the development of regulatory proposals.

The proposed rule does not contain any Federal intergovernmental or private sector mandate. Therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

Conclusion

For the reasons discussed above, including the findings in the Regulatory Flexibility Determination and the International Trade Impact Analysis, the Office of Information and Regulatory Affairs (OIRA) in conjunction with the FAA has determined that this proposed regulation is not a significant regulatory action under Executive Order 12866 and, therefore, is not subject to centralized regulatory review by the OIRA. In addition, the FAA certifies that this regulation will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. This proposal is considered to be nonsignificant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). An initial regulatory evaluation of the proposal, including a Regulatory Flexibility Determination and Trade Impact Analysis, has been placed in the docket. A copy may be obtained by contacting the person identified under "FOR FURTHER INFORMATION CONTACT."

List of Subjects

14 CFR Parts 27 and 29

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

THE PROPOSED AMENDMENTS

In consideration of the foregoing, the FAA proposes to amend 14 CFR parts 27 and 29 as follows:

PART 27 AIRWORTHINESS STANDARDS: NORMAL CATEGORY ROTORCRAFT

1. The authority citation for part 27 continues to read as follows:

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

2. Add a new § 27.602 to read as follows:

§27.602 Critical parts.

(a) *Critical Part* - A critical part is a part, the failure of which could have a catastrophic effect upon the rotorcraft, and for which critical characteristics have been identified which must be controlled to ensure the required level of integrity.

(b) If the type design includes critical parts, a critical parts list shall be established. Procedures shall be established to define the critical design characteristics, identify processes that affect those characteristics, and identify the design change and process change controls necessary for showing compliance with the quality assurance requirements of part 21 of this chapter.

* * * * *

PART 29--AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY ROTORCRAFT

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

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

4. Add a new § 29.602 to read as follows:

§29.602 Critical parts.

(a) *Critical Part* - A critical part is a part, the failure of which could have a catastrophic effect upon the rotorcraft, and for which critical characteristics have been identified which must be controlled to ensure the required level of integrity.

(b) If the type design includes critical parts, a critical parts list shall be established. Procedures shall be established to define the critical design characteristics, identify processes that affect those characteristics, and identify the design change and process change controls necessary for showing compliance with the quality assurance requirements of part 21 of this chapter.

* * * * *

Issued in Washington, DC, on

FAA Action

federal register

Wednesday
August 12, 1998

Part IV

Department of Transportation

Federal Aviation Administration

14 CFR Parts 27 and 29
Harmonization of Miscellaneous Rotorcraft Regulations; Final Rule

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 27 and 29

[Docket No. 28929; Amendment Nos. 27–35 & 29–42]

RIN 2120–AG23

Harmonization of Miscellaneous Rotorcraft Regulations

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is amending the airworthiness standards for normal and transport category rotorcraft. The changes amend the airworthiness standards to require a cockpit indication of autopilot operating mode to the pilots for certain autopilot configurations, to clarify the burn test requirements for electrical wiring for transport category rotorcraft, and to provide a new requirement for an electrical wire burn test for normal category rotorcraft. The rule also adds a 1.33 fitting factor structural strength requirement to the attachment of litters and berths.

EFFECTIVE DATE: September 11, 1998.

FOR FURTHER INFORMATION CONTACT: Carroll Wright, Regulations Group, Rotorcraft Directorate, Aircraft Certification Service, FAA, Worth, Texas 76193–0111, telephone number (817) 222–5120, fax (817) 222–5961.

SUPPLEMENTARY INFORMATION:

Availability of Final Rules

Using a modern and suitable communications software, an electronic copy of this document may be downloaded from the FAA regulations section of the Fedworld electronic bulletin board service (telephone: 703–321–3339), the **Federal Register's** electronic bulletin board service (telephone: 202–512–1661), or the FAA's Aviation Rulemaking Advisory Committee (ARAC) Bulletin Board service (telephone: 800–322–2722 or 202–267–5948).

Internet users may reach the FAA's web page at http://www.faa.gov/avr/arm/nprm/nprm/htm or the **Federal Register** webpage at http://www.access.gpo.gov/su_docs/aces/aces 140.html for access to recently published rulemaking documents.

Any person may obtain a coy of this final rule by submitting a request to the Federal Aviation Administration, Office of Rulemaking, ARM–1, 800 Independence Avenue, SW., Washington, DC 20591, or by calling 202–267–9680. Communications must identify the amendment number of docket number of this final rule.

Persons interested in being placed on the mailing list for future Notices of Proposed Rulemaking (NRPMs) and Final Rules should request from the above office a copy of Advisory Circular No. 11–2A, NPRM Distribution System, that describes the application procedure.

Small Entity Inquiries

The Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA) requires the FAA to report inquiries from small entities concerning information on, and advice about, compliance with statutes and regulations within the FAA's jurisdiction, including interpretation and application of the law to specific sets of facts supplied by a small entity.

If you are a small entity and have a question, contact your local FAA official. If you do not know how to contact your local FAA official, you may contact Charlene Brown, Program Analyst Staff, Office of Rulemaking, ARM–27, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591, 1–888–551–1594. Internet users can find additional information on SBREFA in the "Quick Jump" section of the FAA's web page at http://www.faa.gov and may send electronic inquiries to the following internet address: 9–AWA–SBREFA@faa.dot.gov.

Background

These amendments are based on NPRM No. 97–8 published in the **Federal Register** on June 9, 1997 (62 FR 31475). That notice proposed to amend the airworthiness standards for both normal and transport category rotorcraft based on recommendations from the ARAC. By announcement in the **Federal Register** (60 FR 4221, January 20, 1995), the "Harmonization of Miscellaneous Rotorcraft Regulations Working Group" was chartered by the ARAC. The working group included representatives from the major rotorcraft manufacturers (normal and transport) and representatives from Aerospace Industries Association of America, Inc. (AIA), Association Europeene des Constructeurs de Material Aerospatial (AECMA), Helicopter Association International (HAI), Joint Aviation Authorities (JAA), and the Federal Aviation Administration (FAA) Rotorcraft Directorate. This broad participation is consistent with FAA policy to have all known interested parties involved as early as practicable in the rulemaking process.

On January 9, 1996, the Miscellaneous Harmonization Working Group submitted recommendations to the ARAC concerning the need (1) to provide a cockpit indication of autopilot operating mode to the pilots for certain autopilot configurations, (2) to clarify the burn test requirements for electrical wiring for transport category rotorcraft, (3) to provide a new requirement for an electrical wire burn test for normal category rotorcraft, and (4) to add a 1.33 fitting factor structural strength requirement to the attachment of litters and berths. The working group also submitted recommendations to ARAC concerning the disharmonizations introduced by the new Rotorcraft 30 Second/2 Minute One-Engine Inoperative Power Ratings (OEI) (59 FR 47764; September 16, 1994) and the Crash Resistant Fuel Systems (CRFS) in Normal and Transport Category Rotorcraft (59 FR 50380; October 3, 1994) final rules.

The ARAC reviewed the working group recommendations and subsequently recommended that the FAA revise the airworthiness standards for normal and transport category rotorcraft to incorporate the miscellaneous changes. The changes to 14 CFR parts 27 and 29 (parts 27 and 29) are harmonized with the European Joint Aviation Requirements (JAR) 27 and 29.

The FAA evaluated the ARAC recommendations and made its proposals in NPRM 97–8. The FAA received two comments to the proposed miscellaneous changes.

Discussion of Comments

Interested persons have been afforded an opportunity to participate in the making of these amendments. Due consideration was given to the comments received from the two commenters. One commenter representing HAI was fully supportive of the proposed changes.

Another commenter recommended changes to the proposed part 27 electrical wire burn test requirements. This commenter does not believe self-extinguishing wire is required for low amperage installation and requested the following wording be added to § 27.1365: "* * * To require self-extinguishing installation of electrical wire and cable larger than 18 gauge and carrying current draws of over 5 amps per wire. Multi-strand cable with over 4 strands in a closed cable sheave are exempt from this requirement * * *" The FAA does not agree to exempt multi-strand wires or 18 gauge wires or smaller. Any wire, regardless of size or number of strands, may constitute a fire hazard. Small gauge wires may be

routed in wire bundles with larger gauge wires. Any fire in the wire bundle would be fueled by nonself-extinguishing wire and thereby defeat the purpose of the rule.

After considering all of the comments, the FAA has determined that air safety and the public interest require adoption of the amendments are proposed.

Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. § 3507(d)), there are no requirements for information collection associated with this final use.

International Compatibility

The FAA has determined that a review of the Convention on International Civil Aviation Standards and Recommended Practices is not warranted because there is not a comparable rule under International Civil Aviation Organization (ICAO) standards.

Regulatory Evaluation Summary

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 (RFA) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Office of Management and Budget directs agencies to assess the effects of regulatory changes on international trade. And fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) 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 annually (adjusted for inflation). In conducting these analyses, the FAA has determined that this rule: (1) will generate benefits that justify its costs and is not a "significant regulatory action" as defined in the Executive Order; (2) is not "significant" as defined as DOT's Regulatory Policies and Procedures; (3) will not have a significant impact on a substantial number of small entities; (4) will lessen restraints on international trade; and (5) does not contain a significant intergovernmental or private sector mandate. These analyses, available in the docket, are summarized below.

Economic Evaluation

The revisions will impose no incremental costs on the larger manufacturers that produce both part 27 and 29 rotorcraft. For smaller manufacturers producing only part 27 rotorcraft, there will be incremental costs totalling approximately $60,000 (nondiscounted 1997 dollars) per type certification. For some manufacturers of specialized equipment in part 27 rotorcraft, incremental cost could equal an additional $500 per rotorcraft. Overall, the changes will increase safety and promote harmonization between FAA and JAA regulations. Harmonization will eliminate unnecessary duplication of certification requirements (e.g., testing/design), thus reducing manufacturers' costs.

The costs and benefits of the changes regarding the fitting factor for berths and litters, removal of the phrase "unless a rollover is shown to be extremely remote" (in §§ 27.975(b) and 29.975(a)(7)), autopilot operating mode, and burn test for electrical wire in normal category rotorcraft are summarized below. All other revisions involve minor clarifications or administrative changes.

The fitting factor requirement will not impose incremental costs on most rotorcraft manufacturers. One small manufacturer of part 27 rotorcraft indicated additional nonrecurring testing and analysis costs of $2,100 to substantiate the 1.33 factor in an initial new type certification; most likely, this additional cost will not be incurred in subsequent type certification. Although there have been no identifiable accidents involving litters attributable to insufficient attachment strength, even one minor injury will far exceed the relatively low costs. Codification of the 1.33 fitting factor, which is inherent in most current designs, will ensure that all future designs include this standard, increasing the minimum level of safety.

There will be no incremental costs or benefits associated with removal of the phrase "unless a rollover is shown to be extremely remote" in §§ 27.975(b) and 29.975(a)(7) since rotorcraft currently meet the minimum fuel spillage requirements of these sections.

The autopilot display requirement will not impose any incremental costs on rotorcraft manufacturers since new autopilot systems employed in rotorcraft are identical to those in airplanes and the mode indicator in now integral to such system. Codification of this requirement will ensure that all future rotorcraft designs comply with this standard.

Most U.S. and European manufacturers currently use electrical wire that meets the burn test requirements for transport category rotorcraft since they produce both parts 27 and 29 rotocraft. However, the few manufacturers that produce normal category rotorcraft only will likely experience additional costs. One manufacturer estimates additional nonrecurring testing/design costs at $5,300 per type certification and additional wiring costs of $530 per rotorcraft. At an estimated production of seven rotorcraft per year, the incremental recurring costs will total $3,710 per year for ten years, or $37,100 total (nondiscounted 1997 dollars), under one type certification. Another manufacturer estimates additional wiring costs of $370 per rotorcraft and no additional nonrecurring costs. At an estimated production of 20 rotorcraft per year, the incremental recurring costs will total $7,400 per year ten years, or $74,000 total (nondiscounted 1997 dollars), under one type certification. Averaging the incremental costs for these two manufacturers results in an estimate of approximately $58,200 per type certification (135 units produced at approximately $430 per unit).

Part 27 rotorcraft which will be used in specialized operations may require somewhat more expensive wiring to meet the new burn test requirements. The second commenter to the notice alluded to earlier (a manufacturer of fire-fighting systems) indicates that meeting the new standards will result in a 5 percent increase in the selling price of its system, or $900 per unit. A manufacturer of agricultural spraying systems, however, indicates increased per system costs of only a fraction of one percent, equating to $100 per unit. Since both of these systems represent the type of add-on electrical system potentially affected by the wiring provision, using the average of the two estimates, or $500, is appropriate. Assuming 20 of the new production rotorcraft (about 15%) will be equipped with the add-on systems, the additional incremental costs total $10,000.

Examination of National Transportation Safety Board accident data for the period 1983 through 1995 indicates several rotorcraft accidents and incidents in which the electrical system was cited as a cause or contribute factor. One accident (in June 1994) was primarily caused by an electrical short in the wiring which burned a hole in the main fuel line, causing a post-impact fire that destroyed the part 27 helicopter. The FAA believes that the revised burn test requirements could have prevented this accident. If

the rule prevents one such accident during the operating lives (25-years) of rotorcraft produced under one part 27 type certification, the rule will be cost-beneficial: Replacement costs of a substantially-damaged rotorcraft equals $125,000 (this benefit alone will exceed the total costs of approximately $70,000); adding cumulative damage from two or three minor incidents (say $20,000 to $30,000) and potential harmonization cost savings ($50,000, based on estimates from previous harmonized rotorcraft rules) increases the benefits to approximately $200,000, which is almost three times the costs. If one serious injury (valued at over $500,000) is prevented, the benefits of the rule would be several times the estimated costs.

In addition, codification of those requirements complied with indirectly (i.e., as a result of complying with other provisions) or "voluntarily" (by virtue of competitive pressures) will ensure continuation of enhanced safety levels in future rotorcraft designs.

Based on the findings of no significant incremental costs coupled with the benefits of harmonization savings and higher levels of safety, the FAA has determined that the rule will be cost-beneficial.

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 will significant economic impact on a substantial number of small entities. If the determination is that it will, 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 1980 act 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.

For manufacturers, a small entity is one with 1,500 or fewer employees. Only five rotorcraft have 1,500 or fewer employees and therefore qualify as small entities. However, three of these are not currently producing new type-certificated rotocraft, and another does not compete with the larger manufacturers. Consequently, only one producer could potentially be impacted by this rule. However the annualized increased certification costs for a rotorcraft manufacturer (based on the average incremental costs of the wiring requirements as reported by the two manufacturers, added to the costs to comply with the fitting factor requirements) equals approximately $4,400 per type certification, which is not considered significant within the meaning of the RFA. Consequently, the FAA certifies that the rule will not have a significant economic impact on a substantial number of small rotorcraft manufacturers.

The two manufacturers of specialized component systems described earlier are also small entities; notwithstanding, the average $500 incremental cost can easily be passed on to purchasers given the inelastic demand for such specialized rotorcraft systems. There is not a substantial number of other rotorcraft systems. There is not a substantial number of other rotorcraft parts manufacturers that will be impacted by this rule. Consequently, the FAA certifies that the rule will not have a significant economic impact on a substantial number of small rotorcraft parts manufacturers.

International Trade Impact Assessment

Consistent with the Administration's belief in the general superiority, desirability, and efficacy of free trade, it is the policy of the Administrator to remove or diminish, to the extent feasible, barriers to international trade, including both barriers affecting the export of American goods and services to foreign countries and those affecting the import of foreign goods and services into the United States.

In accordance with that policy, the FAA is committed to develop as much as possible its aviation standards and practices in harmony with its trading partners. Significant cost savings can result from this, both to American companies doing business in foreign markets, and foreign companies doing business in the United States.

This rule is a direct action to respond to this policy by increasing the harmonization of the U.S. Federal Aviation Regulations with the European Joint Aviation Requirements. The result will be a positive step toward removing impediments to international trade.

Federalism Implications

The regulations herein will not have substantial direct effects 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, in accordance with Executive Order 12612, it is determined that this rule will not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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 government, in the aggregate, or by the private sector, of $100 million or more (adjusted annually for inflation) in any one year. Section 204(a) of the Act, 2 U.S.C. 1534(a), requires the Federal agency to develop an effective process to permit timely input by elected officers (or their designees) of State, local, and tribal governments on a proposed "significant intergovernmental mandate." A "significant intergovernmental mandate" under the Act is any provision in a Federal agency regulation that will impose an enforceable duty upon State, local, and tribal governments, in the aggregate, of $100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533, which supplements section 204(a), provides that before establishing any regulatory requirements that might significantly or uniquely affect small governments, the agency shall have developed a plan that, among other things, provides for notice to potentially affected small governments, if any, and for a meaningful and timely opportunity to provide input in the development of regulatory proposals.

The FAA determined that this rule does not contain a significant intergovernmental or private sector mandate as defined by the Act.

List of Subjects in 14 CFR Parts 27 and 29

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

The Amendments

Accordingly, the FAA amends 14 CFR parts 27 and 29 as follows:

PART 27—AIRWORTHINESS STANDARDS: NORMAL CATEGORY ROTORCRAFT

1. The authority citation for part 27 continues to read as follows:

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

2. In § 27.625, a new paragraph (d) is added to read as follows:

§ 27.625 Fitting factors.

* * * * *

(d) Each seat, berth, litter, safety belt, and harness attachment to the structure must be shown by analysis, tests, or both, to be able to withstand the inertia forces prescribed in § 27.561(b)(3) multiplied by a fitting factor of 1.33.

3. Section 27.785 is amended by revising the heading and by adding a new sentence to the end of paragraph (k)(2) to read as follows:

§ 27.785 Seats, berths, litters, safety belts, and harnesses.

* * * * *

(k) * * *

(2) * * * The fitting factor required by § 27.625(d) shall be applied.

§ 27.975 [Amended]

4. In § 27.975, paragraph (b) is amended by removing the words", unless a rollover is shown to be extremely remote".

5. In § 27.1329, a new paragraph (f) is added to read as follows:

§ 27.1329 Automatic pilot system.

* * * * *

(f) If the automatic pilot system can be coupled to airborne navigation equipment, means must be provided to indicate to the pilots the current mode of operation. Selector switch position is not acceptable as a means of indication.

6. In § 27.1365, a new paragraph (c) is added to read as follows:

§ 27.1365 Electric cables.

* * * * *

(c) Insulation on electrical wire and cable installed in the rotorcraft must be self-extinguishing when tested in accordance with Appendix F, Part I(a)(3), of part 25 of this chapter.

PART 29—AIRWORTHINESS STANDARDS:TRANSPORT CATEGORY ROTORCRAFT

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

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

8. In § 29.625, a new paragraph (d) is added to read as follows:

§ 29.625 Fitting factors.

* * * * *

(d) Each seat, berth, litter, safety belt, and harness attachment to the structure must be shown by analysis, tests, or both, to be able to withstand the inertia forces prescribed in § 29.561(b)(3) multiplied by a fitting factor of 1.33.

9. Section 29.785 is amended by revising the heading and by adding a new sentence to the end of paragraph (k)(2) to read as follows:

§ 29.785 Seats, berths, litters, safety belts, and harnesses

* * * * *

(k) * * *

(2) * * * The fitting factor required by § 29.625(d) shall be applied.

§ 29.923 [Amended]

10. In § 29.923(a), the first sentence of the introductory text is amended adding the phrase "and (p)" immediately following the reference to paragraph "(n)".

§ 29.975 [Amended]

11. In § 29.975, paragraph (a)(7) is amended by removing the words ", unless a rollover is shown to be extremely remote".

12. In § 29.1329, a new paragraph (f) is added to read as follows:

§ 29.1329 Automatic pilot system.

* * * * *

(f) If the automatic pilot system can be coupled to airborne navigation equipment, means must be provided to indicate to the pilots the current mode of operation. Selector switch position is not acceptable as a means of indication.

13. In § 29.1351, paragraph (d)(1)(iii) is removed.

§ 29.1351 General.

14. In § 29.1359, a new paragraph (c) is added to read as follows:

§ 29.1359 Electrical system fire and smoke protection.

* * * * *

(c) Insulation on electrical wire and cable installed in the rotorcraft must be self-extinguishing when tested in accordance with Appendix F, Part I(a)(3), of part 25 of this chapter.

Issued in Washington, DC, on August 7, 1998.

Jane F. Garvey,

Administrator.

[FR Doc. 98–21609 Filed 8–11–98; 8:45 am]

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Part II

Department of Transportation

Federal Aviation Administration

14 CFR Parts 27 and 29
Rotorcraft Load Combination Safety Requirements; Final Rule

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 27 and 29

[Docket No. 29277; Amendment No. 27–36 and 29–43]

RIN 2120–AG59

Rotorcraft Load Combination Safety Requirements

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This final rule amends the airworthiness standards to provide improved safety standards for rotorcraft load combination (RLC) certification. Several accidents occurred in the past 15 years involving the carriage of humans external to the rotorcraft. These amendments provide an increased level of safety in the carriage of humans. Also, significant changes in equipment employed in external load operations have occurred. This document addresses those advances in technology and is harmonized to international standards.

EFFECTIVE DATE: October 5, 1999.

FOR FURTHER INFORMATION CONTACT: Mike Mathias, Rotorcraft Directorate, Aircraft Certification Service, Regulations Group, FAA, Fort Worth, Texas 76193–0111, telephone (817) 222–5123, fax 817–222–5959.

SUPPLEMENTARY INFORMATION:

Availability of Final Rules

Using a modern and suitable communications software, an electronic copy of this document may be downloaded from the FAA regulations section of the Fedworld electronic bulletin board service (telephone: 703–321–3339), or the Government Printing Office's (GPO) electronic bulletin board service (telephone: 202–512–1661).

Internet users may reach the FAA's web page at http://www.faa.gov/avr/arm/nprm/nprm.htm or the GPO's web page at http://www.access/gpo.gov/nara for access to recently published rulemaking documents.

Any person may obtain a copy of this final rule by submitting a request to the FAA, Office of Rulemaking, ARM–1, 800 Independence Avenue, SW, Washington DC 20591, or by calling (202) 267–9680. Communications must identify the amendment number or docket number of this final rule.

Persons interested in being placed on a mailing list for future Notices of Proposed Rulemaking (NPRM's) and final rules should request from ARM–1 a copy of Advisory Circular (AC) No. 11–2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedures.

Small Entity Inquiries

If you are a small entity and have a question, contact your local FAA official. If you do not know how to contact your local FAA official, you may contact Charlene Brown, Program Analyst Staff, Office of Rulemaking, ARM–27, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591, 1–888–551–1594. Internet users can find additional information on SBREFA in the "Quick Jump" section of the FAA's web page under "Rulemaking (ARM)" at http://www.faa.gov and may send electronic inquiries to the following Internet address: 9–AWA–SBREF@faa.gov.

Background

On November 27, 1991, following an announcement in the **Federal Register** (56 FR 63546, December 4, 1991), the ARAC charged the External Load Working Group to recommend new or revised airworthiness standards for Class D rotorcraft external loads. The Working Group assigned to this task included technical specialists knowledgeable in all areas of external load design and operational requirements. This broad participation is consistent with FAA policy to involve all known interested parties early in the rulemaking process.

The working group researched a wide range of data developed by the FAA, the military, and other nations' airworthiness authorities. Copies of the research documents are included in the docket.

Although rotorcraft external load operations are routinely conducted in a safe manner, several preventable accidents and incidents have occurred during the preceding 15 years. For example, several preventable inadvertent releases of humans carried external to the rotorcraft have occurred. Also, significant changes in the equipment employed in external load operations have occurred such as new rigging devices. Rotorcraft are now more diverse in design, more maneuverable, and more powerful.

A study of the issues prompted the Working Group to recommend updated requirements for modern external load equipment and operational practices. The working group proposed requirements to (1) decrease the potential for future accidents and incidents; (2) provide that external cargo load carrying devices, their release mechanisms, their load carrying systems, and their flight performance reflect modern operational needs; (3) provide separate and increased levels of safety for nonhuman external cargo (NHEC) and human external cargo (HEC) RLC's; and (4) provide updated standards that harmonize with the Joint Airworthiness Regulations (JAR).

The FAA evaluated the ARAC recommendations and proposed external load standards for rotorcraft certificated under 14 CFR parts 27 and 29 in NPRM 98–6 published on July 13, 1998 (63 FR 37745). The FAA received comments from four commenters. All commenters were generally in favor of the proposals but offered the following comments:

Discussion of Comments

14 CFR 27.865(b) and 29.865(b)

A commenter recommended that §§ 27.865(b), 29.865(b), 27.865(b)(3)(ii), and 29.865(b)(3)(ii) be expanded to better define the lightning requirements for external loads. The commenter further recommended that operational limitations be required, particularly when environmental forecasts involve lightning. The FAA believes that the commenter's concerns are fully and adequately addressed by the current certification regulations and these proposals. The level of protection from lightning provided by the current certification regulations, §§ 27.610 and 29.610, and proposals §§ 27.865(b)(3)(ii) and 29.610(b)(3)(ii), clearly defines a reasonable level of safety for the entire RLC from random lightning strikes during operations. Any specific operational restriction for a given RLC that clearly relates to potential lightning strikes will become a flight manual limitation under current §§ 27.1583, 29.1583, and 133.45.

Another commenter states that the wording in proposed §§ 27.865(b)(3)(i) and 29.865(b)(3)(i) implies that the quick release system (QRS) must only be capable of releasing the rated load at 1G. The commenter recommended an improvement to the wording to require that the QRS be certified to the full limit load capability. The FAA intends that the QRS must function up to the applicable limit load defined by the vertical limit load factors and their application proposed in §§ 27.865(a) and 29.865(a). The proposal in §§ 27.865(b)(3)(i) and 29.865(b)(3)(i) is identical to current §§ 27.865(b)(3) and 29.865(b)(3). The wording is commonly understood and is defined in current advisory material as the maximum external limit load. However, the FAA agrees that the wording could be

improved and will insert the word "limit" in §§ 27.865(b0(3)(i) and 29.865(b)(3)(i).

14 CFR 27.865(c) and 29.865(c)

A commenter stated that § 29.865(c)(5) would require special procedures and abnormal piloting techniques and should be removed. The FAA disagrees. Special procedures are not required for any external load operation involving human external cargo. The only procedures necessary for external load operations (current or proposed) are those now required under current regulations such as §§ 29.1585 and 133.45. No abnormal piloting techniques are intended or foreseen.

A commenter stated that the requirement for performance information in the proposed § 29.865(c)(6) would be better placed in § 29.1587, *Performance information.* The FAA disagrees. Placing the performance criteria as proposed by the commenter was considered during formulation of the proposals and rejected. Specific external loads performance criteria is most readily available and useful in §§ 27.865(c)(6) and 29.865(c)(6). The FAA considers the proposed placement best for clarity, efficiency, and commonality with 14 CFR part 133 (part 133).

Two commenters recommended creating a new § 27.865(c)(6). The first commenter noted that part 27 has recently been amended (Amendment 27–33) to add a Category A performance provision and recommended that § 27.865(c)(6) be added to part 27. The second commenter recommended revising § 29.865(c)(6) to include multi-engine rotorcraft having Category A engine isolation design features and adding an identical § 27.865(c)(6) requirement. The second commenter also recommended that § 133.45(e)(1) be revised to include Class D operations with multi-engine part 27 rotorcraft having Category A engine isolation design features. The FAA agrees in principle that a multi-engine part 27 Category A rotorcraft could provide an adequate level of performance that would permit a safe Class D operation; however, changing § 133.45(e)(1) to permit this is beyond the scope of the proposals. The FAA will consider these changes for future rulemaking.

14 CFR 27.865(d) and 29.865(d)

One commenter was concerned that the proposed wording of §§ 27.865(d) and 29.865(d) would mandate flight testing of each critical configuration and airspeed for each proposed external load. The FAA did not intend such a requirement. When deemed sufficient, analysis alone or analysis supported by bench tests may be used for a given critical configuration and airspeed without the necessity for flight tests.

General Comments

A commenter stated that a number of the proposed requirements could benefit from an indication of what an "acceptable means of compliance" would be. The commenter recommended that AC 25.1309–1A be revised to include these elements. The FAA disagrees. Advisory Circular (AC) 25.1309–1A contains advisory material for part 25 airplanes. The AC's for parts 27 and 29 contain an acceptable means of compliance for rotorcraft.

The FAA adopts the proposals as proposed in NPRM 98–6 except for adding the word "limit" to §§ 27.865(b)(3(i) and 29.865(b)(3)(i) as previously discussed.

Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), there are no requirements for information collection associated with this final rule.

International Compatibility

The FAA has reviewed corresponding International Civil Aviation Organization international standards and recommended practices and JAA regulations, where they exist, and has identified or discussed similarities and differences in these amendments and foreign regulations.

Regulatory Evaluation Summary

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 Office of Management and Budget directs agencies to assess the effects of regulatory changes on international trade. Fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) 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 annually (adjusted for inflation). In conducting these analyses, which are summarized below (and available in the docket), the FAA has determined that this final rule will generate benefits exceeding its costs and is not "a significant regulatory action" as defined in Executive Order 12866 and the Department of Transportation's Regulatory Policies and Procedures. In addition, this final rule will not have a significant impact on a substantial number of small entities, will not constitute a barrier to international trade, and will not result in the expenditure by State, local or tribal governments, in the aggregate, or by the private sector, of $100 million or more annually.

The FAA invited the public to provide comments (and related data) on the assumptions made in the regulatory evaluation for the NPRM. No comments were received on the preliminary regulatory evaluation.

Costs and Benefits

Costs

The costs of the rule, which will be borne by manufacturers and operators, are evaluated for the time period extending from its implementation date through the operating lives of 75 rotorcraft assumed to be produced under 4 new type certificates (involving 15-year production runs of 5 rotorcraft per year total under all 4 new type certificates) and placed into part 133 service. Over the course of this evaluation period, incremental costs will total approximately $679,000 (1998 dollars) or $449,000 discounted to present value (using an interest rate of 7 percent and letting "present" be the date of initial type certification application). Of the $679,000 total cost, $447,000 is attributable to incremental design, analysis, test, and other certification costs, $30,000 to incremental production costs (75 rotorcraft at $400 each), and $202,500 to incremental weight penalty fuel costs ($180 per year per rotorcraft over 15-year operating lives of 75 rotorcraft). On a per-rotorcraft basis, costs will average approximately $9,000 or $6,000 discounted. These incremental costs will be offset to some extent by potential cost savings associated with harmonizing these airworthiness standards with the JAA, streamlining certification approvals for part 133 operators, and relaxing some of the requirements for parts 27 and 29 manufacturers (see Benefits section, below).

Benefits

To estimate the safety benefits of the rule, the FAA reviewed records of accidents involving part 133 operators that occurred between mid-1983 and

1998 that could have been prevented or the losses reduced if the changes in the rule had been in effect. During this 15-year period, there were 22 such accidents involving fatal and/or non-fatal injuries or damage to equipment or both. Ten of the accidents resulted in harm to persons (either inside or outside of the rotorcraft), totaling nine fatalities and two serious injuries. Twenty of the 22 accidents involved either substantial damage (8) or destruction of the rotorcraft (12).

To provide a basis for comparing the safety benefits and costs of rulemaking actions, the FAA currently uses a minimum statistical value of $2.7 million for fatality avoided and $521,800 for a serious injury avoided. Applying these standards to the casualty losses summarized above and making allowances for the costs of rotorcraft damage, the total cost of the 22 accidents was approximately $31.1 million.

The FAA estimates that the final rule could prevent at least 50 percent of the type of accidents summarized above. Applying it retrospectively yields dollar benefits of approximately $15.5 million (One-half of $31.1 million). Over the 15-year accident evaluation period, the part 133 fleet averaged approximately 300 active rotorcraft. Therefore, the benefits averaged approximately $3,400 per year per rotorcraft ($15.5 million/15years/300 operating part 133 rotorcraft per year). Applying this per-rotorcraft safety benefit to the cumulative number of complying rotorcraft results in total safety benefits of $3.8 million (or $1.1 million discounted to present value). On a per-rotorcraft basis, these benefits average approximately $51,000 or $14,300 discounted to the present.

In addition to improving safety, the final rule provides some cost-relief in certain respects. New production rotorcraft will be delivered with standardized procedures for external load operations, and these procedures could result in a small savings to part 133 operators. Further, changes to the preceding regulations that relate to the primary and backup quick-release devices will reduce production costs for parts 27 and 29 rotorcraft manufacturers. The changes will also increase harmonization and commonality between U.S. and European airworthiness standards. Harmonization will eliminate unnecessary differences in airworthiness requirements, thus reducing manufacturers' certification costs.

Comparison of Costs and Benefits

The rule will generate benefits in the form of increased safety and cost relief (see preceding paragraph—the potential production cost relief has not been included in the cost/benefit calculation). On a per-rotorcraft basis, the life-cycle safety benefits will average approximately $14,300 (discounted) and the costs will average approximately $6,000 (discounted), yielding a benefit-to-cost ratio of 2.4 to 1. On this basis alone, the rule is cost-beneficial; additional quantified efficiency and harmonization benefits will increase this ratio.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 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 will have a significant economic impact on a substantial number of small entities. If the determination is that it will, the agency must prepare a regulatory flexibility analysis (RFA) 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 1980 Act provides that the head of the agency may so certify and an RFA is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

The entities that will be affected by this rule consist of rotorcraft manufacturers (included in Standard Industrial Classification (SIC) 3721, Aircraft and Aircraft Parts Manufacturers) and external load operators (SIC 4512, 3413, 4522). Manufacturers will incur additional development, certification, and production costs. In addition to indirectly incurring all or part of these costs in the form of higher rotorcraft acquisition costs, operators will incur increased fuel costs resulting from weight penalties. Although the certification costs (non-recurring) will be either fully absorbed by the manufacturer(s), passed on in-total to operator(s) (purchasers), or more likely, absorbed in some proportion by both, the FAA in this analysis adopts a conservative approach and allocates total certification costs to each category in assessing significant economic impact. Incremental per-unit production costs, however, are assumed to be fully passed on to purchasers (operators.)

For manufacturers, a small entity is one with 1,500 or fewer employees. Only 5 rotorcraft manufacturers have 1,500 or fewer employees and therefore qualify as small entities. However, three of these are not currently producing new type-certificated rotorcraft, and a fourth does not produce rotorcraft used for external loads. The fifth small manufacturer produces specialized smaller rotorcraft, a minority of which are configured for external load operations. This producer does not compete with the larger manufacturers. The annualized certification costs imposed by the rule are estimated to be $10,800 per manufacturer for each certification and are not considered significant within the meaning of the RFA.

There are numerous external load operators. The FAA has not determined how many of these are small operators and if a substantial number will potentially be impacted by the rule. However, most external load operations involve specialized activities such as logging, offshore oil drilling, or emergency rescue operations. The demand for such operations is highly price-inelastic; the operators can readily pass on the incremental costs to their customers. Notwithstanding, the maximum annualized cost per rotorcraft will most likely not be greater than $618 (discounted) (includes manufacturers' certification and production costs passed on to the purchaser and increased fuel costs but excludes potential offsetting cost-savings). This amount probably equates to less than the cost of 4 hours' operating time (representing a de minimus portion of annual revenues) and is not considered significant within the meaning of the Act. In addition, no small manufacturer or small operator will bear a disproportionate cost burden nor have a greater likelihood of failing in business compared to larger entities.

Based on the findings delineated above and consistent with the objectives and requirements of the RFA as amended, the FAA certifies that this final rule will not have a significant

economic impact on a substantial number of small entities.

International Trade Impact Assessment

Consistent with the Administration's belief in the general superiority, desirability, and efficacy of free trade, it is the policy of the Administrator to remove or diminish, to the extent feasible, barriers to international trade, including both barriers affecting the export of American goods and services to foreign countries and those affecting the import of foreign goods and services into the United States.

In accordance with that policy, the FAA is committed to develop as much as possible its aviation standards and practices in harmony with its trading partners. Significant cost savings can result from this, both to United States' companies doing business in foreign markets, and foreign companies doing business in the United States. This final rule is a direct action to respond to this policy by increasing the harmonization of the U.S. Federal Aviation Regulations with the European JAR. The result will be a positive step toward removing impediments to international trade.

Federalism Implications

The regulations herein will 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, in accordance with Executive Order 12612, it is determined that this rule will not have sufficient federalism implications to warrant the preparation of a federalism assessment.

Unfunded Mandates Reform Act

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. Section 204(a) of the Act, 2 U.S.C. 1534(a), requires the Federal agency to develop an effective process to permit timely input by elected officers (or their designees) of State, local, and tribal governments on a proposed "significant intergovernmental mandate." A "significant intergovernmental mandate" under the Act is any provision in a Federal agency regulation that will impose an enforceable duty upon State, local, and tribal governments, in the aggregate, of $100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533, which supplements section 204(a), provides that before establishing any regulatory requirements that might significantly or uniquely affect small governments, the agency shall have developed a plan that, among other things, provides for notice to potentially affected small governments, if any, and for a meaningful and timely opportunity to provide input in the development of regulatory proposals.

The FAA determines that this final rule does not contain a significant intergovernmental or private sector mandate as defined by the Act.

Energy Impact

The energy impact of the rulemaking document has been assessed in accordance with the Energy Policy and Conservation Act (EPCA) and Public L. 94–163, as amended (42 U.S.C. 6362). It has been determined that it is not a major regulatory action under the provisions of the EPCA.

Environmental Analysis

FAA Order 1050.1D defines FAA actions that may be categorically excluded from preparation of a National Environmental Policy Act (NEPA) environmental assessment or environmental impact statement. In accordance with FAA Order 1050.1D, appendix 4, paragraph 4(j), this rulemaking action qualifies for a categorical exclusion.

List of Subjects

14 CFR Part 27

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

14 CFR Part 29

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

The Amendments

In consideration of the foregoing, the Federal Aviation Administration amends parts 27 and 29 of Chapter I, Title 14, of the Code of Federal Regulations as follows:

PART 27—AIRWORTHINESS STANDARDS: NORMAL CATEGORY ROTORCRAFT

1. The authority citation for part 27 continues to read as follows:

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

2. Amend § 27.25 by revising paragraph (c) to read as follows:

§ 27.25 Weight limits.

* * * * *

(c) *Total weight with jettisonable external load.* A total weight for the rotorcraft with a jettisonable external load attached that is greater than the maximum weight established under paragraph (a) of this section may be established for any rotorcraft-load combination if—

(1) The rotorcraft-load combination does not include human external cargo,

(2) Structural component approval for external load operations under either § 27.865 or under equivalent operational standards is obtained,

(3) The portion of the total weight that is greater than the maximum weight established under paragraph (a) of this section is made up only of the weight of all or part of the jettisonable external load,

(4) Structural components of the rotorcraft are shown to comply with the applicable structural requirements of this part under the increased loads and stresses caused by the weight increase over that established under paragraph (a) of this section, and

(5) Operation of the rotorcraft at a total weight greater than the maximum certificated weight established under paragraph (a) of this section is limited by appropriate operating limitations under § 27.865(a) and (d) of this part.

3. The undesignated center heading preceding § 27.865 is revised as set forth below; and in § 27.865 the section heading, paragraph (a) introductory text and paragraph (b) are revised; paragraphs (c) and (d) are redesignated as (e) and (f) and revised; and new paragraphs (c) and (d) are added to read as follows:

External Loads

§ 27.865 External loads.

(a) It must be shown by analysis, test, or both, that the rotorcraft external load attaching means for rotorcraft-load combinations to be used for nonhuman external cargo applications can withstand a limit static load equal to 2.5, or some lower load factor approved under §§ 27.337 through 27.341, multiplied by the maximum external load for which authorization is requested. It must be shown by analysis, test, or both that the rotorcraft external load attaching means and corresponding personnel carrying device system for rotorcraft-load combinations to be used for human external cargo applications can withstand a limit static load equal to 3.5 or some lower load factor, not less than 2.5, approved under §§ 27.337 through 27.341, multiplied by the maximum external load for which

authorization is requested. The load for any rotorcraft-load combination class, for any external cargo type, must be applied in the vertical direction. For jettisonable external loads of any applicable external cargo type, the load must also be applied in any direction making the maximum angle with the vertical that can be achieved in service but not less than 30°. However, the 30° angle may be reduced to a lesser angle if—

* * * * *

(b) The external load attaching means, for jettisonable rotorcraft-load combinations, must include a quick-release system to enable the pilot to release the external load quickly during flight. The quick-release system must consist of a primary quick release subsystem and a backup quick release subsystem that are isolated from one another. The quick-release system, and the means by which it is controlled, must comply with the following:

(1) A control for the primary quick release subsystem must be installed either on one of the pilot's primary controls or in an equivalently accessible location and must be designed and located so that it may be operated by either the pilot or a crewmember without hazardously limiting the ability to control the rotorcraft during an emergency situation.

(2) A control for the backup quick release subsystem, readily accessible to either the pilot or another crewmember, must be provided.

(3) Both the primary and backup quick release subsystems must—

(i) Be reliable, durable, and function properly with all external loads up to and including the maximum external limit load for which authorization is requested.

(ii) Be protected against electromagnetic interference (EMI) from external and internal sources and against lightning to prevent inadvertent load release.

(A) The minimum level of protection required for jettisonable rotorcraft-load combinations used for nonhuman external cargo is a radio frequency field strength of 20 volts per meter.

(B) The minimum level of protection required for jettisonable rotorcraft-load combinations used for human external cargo is a radio frequency field strength of 200 volts per meter.

(iii) Be protected against any failure that could be induced by a failure mode of any other electrical or mechanical rotorcraft system.

(c) For rotorcraft-load combinations to be used for human external cargo applications, the rotorcraft must—

(1) For jettisonable external loads, have a quick-release system that meets the requirements of paragraph (b) of this section and that—

(i) Provides a dual actuation device for the primary quick release subsystem, and

(ii) Provides a separate dual actuation device for the backup quick release subsystem;

(2) Have a reliable, approved personnel carrying device system that has the structural capability and personnel safety features essential for external occupant safety;

(3) Have placards and markings at all appropriate locations that clearly state the essential system operating instructions and, for the personnel carrying device system, the ingress and egress instructions;

(4) Have equipment to allow direct intercommunication among required crewmembers and external occupants; and

(5) Have the appropriate limitations and procedures incorporated in the flight manual for conducting human external cargo operations.

(d) The critically configured jettisonable external loads must be shown by a combination of analysis, ground tests, and flight tests to be both transportable and releasable throughout the approved operational envelope without hazard to the rotorcraft during normal flight conditions. In addition, these external loads must be shown to be releasable without hazard to the rotorcraft during emergency flight conditions.

(e) A placard or marking must be installed next to the external-load attaching means clearly stating any operational limitations and the maximum authorized external load as demonstrated under § 27.25 and this section.

(f) The fatigue evaluation of § 27.571 of this part does not apply to rotorcraft-load combinations to be used for nonhuman external cargo except for the failure of critical structural elements that would result in a hazard to the rotorcraft. For rotorcraft-load combinations to be used for human external cargo, the fatigue evaluation of § 27.571 of this part applies to the entire quick release and personnel carrying device structural systems and their attachments.

PART 29—AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY ROTORCRAFT

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

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

5. Amend § 29.25 by revising paragraph (c) to read as follows:

§ 29.25 Weight limits.

* * * * *

(c) *Total weight with jettisonable external load.* A total weight for the rotorcraft with a jettisonable external load attached that is greater than the maximum weight established under paragraph (a) of this section may be established for any rotorcraft-load combination if—

(1) The rotorcraft-load combination does not include human external cargo,

(2) Structural component approval for external load operations under either § 29.865 or under equivalent operational standards is obtained,

(3) The portion of the total weight that is greater than the maximum weight established under paragraph (a) of this section is made up only of the weight of all or part of the jettisonable external load,

(4) Structural components of the rotorcraft are shown to comply with the applicable structural requirements of this part under the increased loads and stresses caused by the weight increase over that established under paragraph (a) of this section, and

(5) Operation of the rotorcraft at a total weight greater than the maximum certificated weight established under paragraph (a) of this section is limited by appropriate operating limitations under § 29.865 (a) and (d) of this part.

6. The undesignated center heading preceding § 29.865 is revised as set forth below; and in § 29.865 the section heading, paragraph (a) introductory text and paragraph (b) are revised; paragraphs (c) and (d) are redesignated as (e) and (f) and revised; and new paragraphs (c) and (d) are added to read as follows:

External Loads

§ 29.865 External loads.

(a) It must be shown by analysis, test, or both, that the rotorcraft external load attaching means for rotorcraft-load combinations to be used for nonhuman external cargo applications can withstand a limit static load equal to 2.5, or some lower load factor approved under §§ 29.337 through 29.341, multiplied by the maximum external load for which authorization is requested. It must be shown by analysis, test, or both that the rotorcraft external load attaching means and corresponding personnel carrying device system for rotorcraft-load combinations to be used for human external cargo applications can withstand a limit static load equal to 3.5 or some lower load factor, not less than 2.5, approved under §§ 29.337

through 29.341, multiplied by the maximum external load for which authorization is requested. The load for any rotorcraft-load combination class, for any external cargo type, must be applied in the vertical direction. For jettisonable external loads of any applicable external cargo type, the load must also be applied in any direction making the maximum angle with the vertical that can be achieved in service but not less than 30°. However, the 30° angle may be reduced to a lesser angle if—

* * * * *

(b) The external load attaching means, for jettisonable rotorcraft-load combinations, must include a quick-release system to enable the pilot to release the external load quickly during flight. The quick-release system must consist of a primary quick release subsystem and a backup quick release subsystem that are isolated from one another. The quick release system, and the means by which it is controlled, must comply with the following:

(1) A control for the primary quick release subsystem must be installed either on one of the pilot's primary controls or in an equivalently accessible location and must be designed and located so that it may be operated by either the pilot or a crewmember without hazardously limiting the ability to control the rotorcraft during an emergency situation.

(2) A control for the backup quick release subsystem, readily accessible to either the pilot or another crewmember, must be provided.

(3) Both the primary and backup quick release subsystems must—

(i) Be reliable, durable, and function properly with all external loads up to and including the maximum external limit load for which authorization is requested.

(ii) Be protected against electromagnetic interference (EMI) from external and internal sources and against lightning to prevent inadvertent load release.

(A) The minimum level of protection required for jettisonable rotorcraft-load combinations used for nonhuman external cargo is a radio frequency field strength of 20 volts per meter.

(B) The minimum level of protection required for jettisonable rotorcraft-load combinations used for human external cargo is a radio frequency field strength of 200 volts per meter.

(iii) Be protected against any failure that could be induced by a failure mode of any other electrical or mechanical rotorcraft system.

(c) For rotorcraft-load combinations to be used for human external cargo applications, the rotorcraft must—

(1) For jettisonable external loads, have a quick-release system that meets the requirements of paragraph (b) of this section and that—

(i) Provides a dual actuation device for the primary quick release subsystem, and

(ii) Provides a separate dual actuation device for the backup quick release subsystem;

(2) Have a reliable, approved personnel carrying device system that has the structural capability and personnel safety features essential for external occupant safety;

(3) Have placards and markings at all appropriate locations that clearly state the essential system operating instructions and, for the personnel carrying device system, ingress and egress instructions;

(4) Have equipment to allow direct intercommunication among required crewmembers and external occupants;

(5) Have the appropriate limitations and procedures incorporated in the flight manual for conducting human external cargo operations; and

(6) For human external cargo applications requiring use of Category A rotorcraft, have one-engine-inoperative hover performance data and procedures in the flight manual for the weights, altitudes, and temperatures for which external load approval is requested.

(d) The critically configured jettisonable external loads must be shown by a combination of analysis, ground tests, and flight tests to be both transportable and releasable throughout the approved operational envelope without hazard to the rotorcraft during normal flight conditions. In addition, these external loads—must be shown to be releasable without hazard to the rotorcraft during emergency flight conditions.

(e) A placard or marking must be installed next to the external-load attaching means clearly stating any operational limitations and the maximum authorized external load as demonstrated under § 29.25 and this section.

(f) The fatigue evaluation of § 29.571 of this part does not apply to rotorcraft-load combinations to be used for nonhuman external cargo except for the failure of critical structural elements that would result in a hazard to the rotorcraft. For rotorcraft-load combinations to be used for human external cargo, the fatigue evaluation of § 29.571 of this part applies to the entire quick release and personnel carrying device structural systems and their attachments.

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Jane F. Garvey,

Administrator.

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