

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Parts 27 and 29**

[Docket No. 29311; Amdt. Nos. 27-38 and 29-45]

RIN 2120-AG60

**Harmonization of Critical Parts Rotorcraft Regulations**

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

**SUMMARY:** This final rule amends the airworthiness standards for both normal and transport category rotorcraft. This amendment defines critical parts. This document also requires a critical parts list with procedures to control the design, substantiation, manufacture, maintenance, and modification of critical parts. The benefits of the rule will be the formalization of the current critical parts procedures and the harmonization of the Joint Aviation Authorities and the U.S. requirements.

**EFFECTIVE DATE:** October 25, 1999.

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

**SUPPLEMENTARY INFORMATION:****Availability of Final Rules**

An electronic copy of this document may be downloaded using a modem and suitable communications software 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 document 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 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 the above office a copy of Advisory Circular

No. 11-2A, NPRM Distribution System, which describes the application procedure.

**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 under "Rulemaking (ARM)" 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.gov

**Background**

By notice in the **Federal Register** (60 FR 4219, January 20, 1995), the ARAC announced the establishment of the Critical Parts Working Group. The FAA tasked ARAC to recommend new or revised requirements for a critical parts list to control the design, substantiation, manufacture, maintenance, and modification of critical parts. ARAC tasked the Critical Parts Working Group. The working group included representatives from the major rotorcraft manufacturers (normal and transport) and representatives from Aerospace Industries Association of America, Inc., Association Europeene des Constructeurs de Material Aerospacial, Transport Canada Aviation, Joint Aviation Authorities (JAA), the FAA Rotorcraft Directorate, and other interested parties. This broad participation is consistent with FAA policy to involve all known interested parties early in the rulemaking process.

The working group presented its findings to the ARAC. The ARAC recommended that the FAA add a critical parts section to the airworthiness standards, 14 CFR parts 27 and 29 (parts 27 and 29). The FAA evaluated the recommendations and made proposals in NPRM No. 98-10 published in the **Federal Register** on August 24, 1998 (63 FR 45129). These airworthiness standards are harmonized and will be adopted by the JAA.

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 the critical characteristics on while certification is

based. Manufacturers currently have various methods to control critical parts.

In §§ 27.602(a) and 29.602(a), a critical part is 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 word "could" in the definition was intended to mean that this failure assessment must consider the effect of flight regime (i.e., forward flight, hover, etc.). The operational environment need not be considered. The term "catastrophic" was intended to mean the inability to conduct an autorotation to a safe landing, without exceptional piloting skills, assuming a suitable landing surface.

The FAA requested comments on these proposals. The FAA considered comments from the three commenters. The commenters were generally in favor of the rule with the following comments:

**Discussion of Comments**

One commenter stated that the definition of a critical part is needed but should be placed in 14 CFR part 1 (part 1). The FAA disagrees because NPRM 98-10 did not propose to amend part 1, and the definition is needed to implement the requirements for a critical parts list in parts 27 and 29.

The commenter was concerned about the FAA requiring duplicate records. The critical parts list specified in §§ 27.602(b) and 29.602(b) will not be a duplicate record but will contain procedures for control of the design, substantiation, manufacturing, maintenance, and modification of critical parts.

The same commenter was concerned that proposed §§ 27.602(b) and 29.602(b) would require a critical parts list for existing model helicopters. The commenter suggested adding a date to the requirements so that the change would not become retroactive. The FAA does not intend a retroactive requirement but does not agree that a date is necessary. Each type design change will be evaluated for the presence of critical parts, which determines the applicability of §§ 27.602(b) and 29.602(b).

Another commenter was concerned that the proposal would abate the Parts Manufacturer Approval (PMA) process for critical parts. The FAA does not intend to change the PMA process by this requirement. The critical parts list will define critical characteristics and contain control procedures that will be a part of the type design data.

Another commenter agreed with the proposal but stated that the requirement should apply to all characteristics and not be limited to critical characteristics. The commenter recommended revising §§ 27.602(b) and 29.602(b) and adding paragraphs (c), (d), and (e). Following are the commenter's recommended paragraph changes and the FAA's response to each recommendation:

(b) The type design shall minimize critical parts. A critical parts list shall be established for the product. Each critical part drawing shall identify this "critical part" classification of the part.

The FAA does not dictate type design. The manufacturer establishes the type design. The FAA's role is to ensure that the type design conforms to the regulations. Minimizing critical parts may not necessarily ensure safer aircraft.

(c) A critical part's plan and supporting procedures shall be established to assure parts consistently are conforming to all engineering requirements for material, process, and dimensions. The Plan's target numerical "escape" risk of a critical non-conformance shall be specified.

The FAA currently requires that all parts conform to all engineering requirements for material, process, and dimensions. The risk of non-conformance is part of the quality assurance program required by 14 CFR part 21 (part 21).

(d) Records of critical parts production and inspection shall be retained for twenty (20) years minimum.

The FAA's record retention requirements are addressed in the quality assurance program required by part 21.

(e) Existence of the critical parts plan shall not minimize the requirement for all products and parts to conform to all technical requirements including the quality assurance requirements of part 21 of this chapter.

The FAA agrees that the critical parts list does not minimize the requirement for all products and parts to conform to technical requirements. However, this proposal places emphasis on the critical parts. Since the commenter's recommended paragraph changes are addressed in the quality assurance program required by part 21, the FAA will not implement them in this rule.

After due consideration of all the comments, the FAA adopts the amendments as proposed in NPRM 98-10.

#### **Paperwork Reduction Act**

The information collection associated with this rule is currently covered under OMB control #2120-0018

#### **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 effect of regulatory changes 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 will 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 rule will merely formalize these procedures into a critical parts list.

The JAA has indicated that it will amend the Joint Aviation Requirements by adopting the requirements in §§ 27.602 and 29.602. The benefits of the rule will be the formalization of the current critical parts procedures and the harmonization of the JAA and the U.S. requirements.

#### **Regulatory Flexibility Determination**

The Regulatory Flexibility Act of 1980 was enacted by Congress to ensure that small entities are not unnecessarily or disproportionately burdened by government regulations. 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. Because this rule formalizes current practices and will result in no more than negligible costs to rotorcraft manufacturers, the FAA certifies that it will not have a significant impact on a substantial number of small entities and an RFA is not required.

#### **International Trade Impact Assessment**

The rule will 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 rule. There will be no cost (or cost savings) advantage to persons in either the United States or to JAA member countries.

#### **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 Public Law 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.

This rule does not contain a Federal intergovernmental or private sector mandate that exceeds \$100 million a year.

#### 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.

#### Energy Impact

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

#### List of Subjects in 14 CFR Parts 27 and 29

Aircraft, Aviation safety, Rotorcraft.

#### The Amendment

In consideration of the foregoing, the Federal Aviation Administration amends parts 27 and 29 of Title 14, 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. 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 August 16, 1999.

**Jane F. Garvey,**

*Administrator.*

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