Federal Aviation Administration – Regulations and Policies
Aviation Rulemaking Advisory Committee

Rotorcraft Issue Area
Rotorcraft Gross Weight and Passenger Issues Working Group

Task 1 – Gross Weight and Passenger Issues

Task Assignment

Aviation Rulemaking Advisory Committee; Rotorcraft Gross Weight and Passenger Issues Working Group

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of establishment of the Rotorcraft Gross Weight and Passenger Issues Working Group.

SUMMARY: Notice is given of the establishment of the Rotorcraft Gross Weight and Passenger Issues 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 Gross Weight and Passenger Issues for Rotorcraft Working Group is charged with recommending to ARAC new or revised requirements for increasing the gross weight and passenger limitations for normal category rotorcraft. 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:

Review Title 14 Code of Federal Regulations part 27 and supporting policy and guidance material to determine the appropriate course of action to be taken for rulemaking and/or policy relative to the issue of increasing the gross weight and passenger limitations for normal category rotorcraft.

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 has formed the Rotorcraft Gross Weight and Passenger Issues Working Group to analyze and recommend to it solutions to issues contained in the assigned tasks. If ARAC accepts the working group's recommendations, it forwards them to the FAA.

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 is 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 Rotorcraft Gross Weight and Passenger Issues 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. 95–1537 Filed 1–19–95; 8:45 am]

BILLING CODE 4910–13–M

Recommendation Letter

7313 Janetta Dr., Fort Worth, TX 76180

MAR 12 1998

Mr. Guy S. Gardner
Associate Administrator
for Regulation and Certification
Federal Aviation Administration
800 Independence Ave., S.W.
Washington, DC 20591

Dear Mr. Gardner:

The Aviation Rulemaking Advisory Committee (ARAC) Working Group activity associated with the Gross Weight and Passenger Issues for Rotorcraft has been completed. The results of their efforts were submitted to ARAC for review. The ARAC examined those results at a public meeting on February 18, 1998, in Anaheim, California, and approved them.

Accordingly, the ARAC hereby submits the following material and recommends that the draft NPRM be processed for publication:

- Draft NPRM
- Executive Summary
- Preliminary Regulatory Evaluation, Regulatory Flexibility Determination and Trade Impact Assessment.

The Working Group also developed proposed Advisory Circular (AC) material. That material is being forwarded to the FAA Rotorcraft Directorate for further action since they have been delegated AC responsibility by FAA Order 8000.51. A copy of the draft AC material is enclosed for your information.

Very truly yours,

John D. Swihart, Jr.
ARAC Assistant Chair for Rotorcraft Issues

Enclosures

cc:
Mr. R. E. Robeson, Jr., ARAC Chair
Mr. Joseph Hawkins, ARAC Executive Director
Mr. Mark R. Schilling, ARAC Asst. Executive Director
Mr. Larry Plaster, Chair, Gross Weight and Passeger Issues for Rotorcraft Working Group
Mr. Glenn Rizner, HAI
Ms. Angela Anderson, FAA, ARM-200

Recommendation

[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 27

[Docket No. ; Notice No.]

RIN

Normal Category Rotorcraft Maximum Weight and Passenger Seat Limitation

AGENCY: Federal Aviation Administration (FAA), DOT

ACTION: Notice of proposed rulemaking (NPRM)

SUMMARY: This notice proposes to amend the airworthiness standards for normal category rotorcraft. This proposal would increase the maximum weight limit from 6,000 to 7,000 pounds and add a passenger seat limitation of nine. The increase in maximum weight is proposed to compensate for the increased weight resulting from additional regulatory requirements, particularly recent requirements intended to improve occupant survivability in the event of a crash. These changes are intended to update current airworthiness standards to provide the safety standards for normal category rotorcraft of 7,000 pounds or less.

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 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 on Federal holidays.

FOR FURTHER INFORMATION CONTACT: Lance Gant, Rotorcraft Standards Staff, Rotorcraft Directorate, Aircraft Certification Service, Fort Worth, Texas 76193-0110, telephone (817) 222-5114, fax 817-222-5959.

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. Specifically, the FAA invites comments and data relating to the top hatch emergency exit proposed in new section 14 CFR 27.805(a). 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 (ARAC) 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.

Persons interested in being placed on a mailing list for future NPRM's should request from the above office a copy of Advisory Circular No. 11-2A, NPRM Distribution System, that describes the application procedure.

Background

Operational and design trends for normal category rotorcraft are approaching the current maximum weight limitations. This proposal would increase the maximum weight limitation from 6,000 to 7,000 pounds and would add a passenger seat limit of nine.

History

Since 1956, the FAA has based the distinction between normal and transport category rotorcraft certification requirements on the certificated maximum weight of the aircraft. Initially, the FAA set the upper weight limit for normal category rotorcraft at 6,000 pounds, based on the spectrum of existing and anticipated designs at that time. The 6,000-pound weight threshold and associated airworthiness standards have served the industry well for over 40 years.

In the 1970's, manufacturers began certificating new light twin-engine rotorcraft in the 4,000 to 6,000 pound weight class. Some single-engine models were also converted to twin-engines. This trend continues. Meanwhile, the FAA certification regulations evolved, gradually adding more stringent safety requirements that ultimately caused permanent increases in empty weight. The high cost of certification of transport category rotorcraft, the increased stringency of the current 14 CFR part 27 (part 27) regulations, and the trend toward

modification of existing models have resulted in several normal category helicopters nearing the current 6,000-pound maximum weight limitation.

Increasing the 6,000-pound weight limit for normal category rotorcraft was not formally discussed with the FAA until November 1991. At that time, a manufacturer petitioned the FAA for a regulatory exemption to allow a rotorcraft to exceed the 6,000-pound maximum weight limit specified for normal category rotorcraft. A summary of the petition was subsequently published in the Federal Register (57 FR 4508, February 5, 1992) for public comment. Comments were few and divided. While some commenters were in favor of the petition, others expressed the view that a weight change should not be permitted without considering increased regulatory stringency and/or a limit on the number of passengers. The FAA determined that the petition did not provide adequate justification nor did it show that a grant of exemption would be in the public interest. The FAA denied the petition but stated in the denial that a further study of the issues would be in the public interest.

The diversity of comments prompted the FAA to investigate the general issue of a future rule change in more detail. By letter dated April 1992 to rotorcraft manufacturers and trade associations, the FAA asked interested parties to comment on the advisability of increasing the current 6,000-pound maximum weight limitation. They were also asked to comment on safety criteria that should be associated with a weight limitation increase. Approximately 30 commenters responded to the request. Although these

responses contained no specific objections to a future regulatory increase in the maximum allowable weight, the commenters articulated a wide range of views regarding the scope of such a revision.

Due to the level of interest in this issue, the FAA held a public meeting on February 2, 1994, immediately following the Helicopter Association International (HAI) Convention in Anaheim, California. All interested parties were given the opportunity to present their views to help determine a course of action that would be in the best interest of the rotorcraft aviation community. Consequently, the FAA and the Joint Aviation Authorities (JAA) determined that there was a need to review the maximum weight and passenger seat limitation for normal category rotorcraft.

Although not a part of this proposal, the FAA Rotorcraft Directorate identified a need to reevaluate the certification standards for rotorcraft at the low end of the maximum weight spectrum as a result of information gathered at this meeting. A joint FAA/JAA/Industry Working Group was tasked to reevaluate the maximum weight and seat limitation issues for all rotorcraft, including requirements for the low passenger capacity rotorcraft.

ARAC Involvement

By notice in the Federal Register (60 FR 4221, January 20, 1995), the FAA announced the establishment of the Gross Weight and Passenger Issues for Rotorcraft Working Group (GWWG). The GWWG was tasked to "Review Title 14 Code of Federal Regulations part 27 and supporting policy and guidance

material to determine the appropriate course of action to be taken for rulemaking and/or policy relative to the issue of increasing the maximum weight and passenger seat limitations for normal category rotorcraft."

The GWWG includes representatives from all parties that have expressed an interest in this subject through submittal of comments to the FAA or through the public meeting process. The GWWG includes representatives from Aerospace Industries Association of America (AIA), The European Association of Aerospace Industries (AECMA), the European JAA, Transport Canada and the FAA Rotorcraft Directorate. Additionally, representatives from the small rotorcraft manufacturers were consulted for their views by the GWWG. This broad participation is consistent with FAA policy to involve all known interested parties as early as practicable in the rulemaking process. The GWWG first met in February 1995 and has subsequently met for a total of six meetings.

Statement of the Issues

Members of the GWWG agreed that there is a valid need to increase the normal category weight limitation and that nine passengers is appropriate for the normal category rotorcraft passenger seat limitation. A nine-passenger seat limitation is consistent with the passenger seat limitation of normal category airplanes certificated under part 23. The decision to include a nine-passenger seat limitation to § 27.1 is not a new idea. Based on the results of FAA Public Meetings held in 1979 and 1980, NPRM 80-25 (45 FR 245, December 18, 1980) included a proposal to limit part 27 rotorcraft to nine

passengers. This passenger seat limitation was not adopted in the final rule because there were no projections for rotorcraft with a maximum weight of 6,000 pounds or less to have more than nine passenger seats.

Considerable discussions during initial GWWG meetings concerned whether additional regulatory requirements should be promulgated to accommodate the increased maximum weight limitations. Although part 27 has always permitted rotorcraft to be certificated to carry up to nine passengers, the current weight limitation has limited practical designs to seven passengers. No normal category rotorcraft to date has been certified and manufactured to carry more than seven passengers. The proposed increase in maximum weight will allow the practical design and production of helicopters that will carry nine passengers. Several sections of part 27 were reviewed to evaluate the possible need for additional regulatory requirements to support this potential increase of two passengers.

The GWWG considered the possible need for additional regulatory requirements if the proposed change to part 27:

1. Related to safety for addition of passengers beyond 7;
2. Related to safety for increased weight; or
3. Resulted in little or no increase in cost or weight.

Based on these criteria, necessary changes were identified.

Industry estimates of the maximum weight necessary to accommodate nine passengers were in the range of 8,000 to 8,500 pounds. Nevertheless,

the GWWG agreed to the new limit as 7,000 pounds based on several considerations. Increasing the limit to 7,000 pounds would address the problem of some current normal category rotorcraft remaining within the part 27 weight limitation while complying with the recent increases in part 27 regulatory requirements. In addition, the GWWG agreed that, with possible incorporation of technological advances, a 7,000-pound limit may be adequate to accommodate a nine-passenger capacity in the future.

The proposed additional regulatory requirements included here were prompted by this potential increase in passenger capacity. Therefore, the GWWG recommended a limit of seven passengers for previously certificated rotorcraft (regardless of maximum weight) unless the certification basis is revised and the rotorcraft complies with part 27 at the amendment level of this proposal. The GWWG also agreed that an applicant may apply for an amended or supplemental type certificate to increase maximum weight above 6,000 pounds without complying with this proposed amendment (other than §§ 27.1 and 27.2) provided that the original seating capacity of the rotorcraft is not increased above that certificated on [insert date 30 days after date of publication of the final rule in the Federal Register].

The GWWG presented its recommendation to ARAC. The ARAC subsequently recommended that the FAA revise the normal category rotorcraft airworthiness standards. The Joint Aviation Authorities (JAA) proposes to harmonize the Joint Aviation Requirements (JAR) concurrently with this NPRM.

FAA Evaluation of ARAC Recommendation

The FAA has reviewed the ARAC recommendation and proposes that the maximum weight limitation be increased to 7,000 pounds and that a passenger seat limitation of nine be added to § 27.1

Section-by-Section Discussion of the Proposals

This NPRM contains proposals to amend part 27. The FAA proposes the following changes to accommodate an increase in the current maximum weight and passenger carrying capability. The proposal also includes additional safety standards identified as imposing little or no increase in cost or weight.

Section 27.1 Applicability

This proposal would revise § 27.1(a) to increase the current maximum weight from 6,000 to 7,000 pounds and to add a nine-passenger seat limitation for normal category rotorcraft. The increase in maximum weight is intended to compensate for increased weight resulting from additional regulatory requirements, particularly recent requirements intended to improve occupant survivability in the event of a crash.

Section 27.2 Special retroactive requirements

This proposal would add a new paragraph (b) to § 27.2 requiring compliance with the part 27 amendments, up to and including this amendment, at the time of application for any normal category rotorcraft for which certification for more than seven passengers is sought. This would only apply to changes in type design for already type certificated rotorcraft, since newly type certificated rotorcraft

would be required to meet the current part 27 requirements. Additionally, the proposal would allow a previously certificated rotorcraft to exceed the 6,000-pound maximum weight limit provided that no increase in passenger capacity is sought beyond that for which the rotorcraft was certificated as of (insert date 30 days after date of publication of the final rule in the Federal Register). Compliance with all the requirements of the existing certification basis, plus any other amendments applicable to the change in type design, would have to be demonstrated at the increased maximum weight.

Section 27.610 Lightning and static electricity protection

This proposal would add to § 27.610 the requirement to provide electrical bonding of all metallic components of the rotorcraft. Bonding is necessary to provide an electrical return path for grounded electrical systems, to minimize the accumulation of static charge, to minimize the risk of electric shock to occupants as well as service and maintenance personnel, and to minimize interference with the operation of electrical and avionic systems caused by lightning and the discharge of static electricity.

Section 27.805 Flight crew emergency exits

This proposal would add a new § 27.805 requirement for flight crew emergency exits, similar to § 29.805, to facilitate rapid evacuation of the flight crew after an emergency ground or water landing.

27.807 Passenger emergency exits

Section 27.807 would be revised to clarify the provisions on emergency exits to ensure that each passenger has ready access to an emergency exit on each side of the fuselage. The proposal also clarifies that normal-use doors may serve as emergency exits but must meet the requirements for emergency exits. This is not stated in the current rule. The proposal adds requirements that emergency exits must open from both inside and outside the rotorcraft and that opening the exit must not require exceptional effort.

Section 27.853 Compartment interiors

This proposal enhances the requirements of § 27.853 for fire protection of compartment interiors by replacing the current provision that allows limited use of materials that are only flash resistant with a requirement that all materials be at least flame-resistant. This change is necessary to ensure safety in the larger passenger cabins and is consistent with the existing requirements for normal category airplanes.

Section 27.1027 Transmissions and gearboxes: General

This proposal would add to § 27.1027 the requirement that the lubrication system for components of the rotor drive system (that require continuous lubrication) must be sufficiently independent of the engine lubrication system to ensure adequate lubrication during autorotation. This requirement already exists in of § 29.1027(a)(2). The lubrication systems of the engines and of the rotor drive system are usually designed to be independent, but this independence is

not specifically required by current regulations. This proposal would require sufficient independence to ensure adequate lubrication during autorotation.

Section 27.1185 Flammable fluids

This proposal would add to § 27.1185 the requirement that absorbent materials be covered or treated to prevent absorption of hazardous quantities of flammable fluids when such materials are installed close to flammable fluid system components that might leak. This requirement is necessary to minimize fire hazards in rotorcraft that may have absorbent material for insulation of the passenger cabin, some of which will be adjacent to fuel or hydraulic fluid lines, and already exists in § 29.1185(d).

Section 27.1187 Ventilation and drainage

This proposal would add to § 27.1187 a requirement for drainage of powerplant installation compartments. Section 27.1187 currently requires these compartments to be ventilated, but there is no requirement for them to be provided with drains as exists in § 29.1187(a)(1) and (2). Drainage of powerplant compartments is necessary to minimize fire hazards by ensuring that leakage of flammable fluids does not result in hazardous accumulations of those fluids near potential ignition sources.

Sections 27.1305 Powerplant instruments and 27.1337 Powerplant instruments

This proposal adds to §§ 27.1305 and 27.1337 a requirement that chip detectors fitted in the rotor drive system also provide an indication to the flight crew when magnetic particles are detected. The present rule requires a chip

detector to be fitted in the rotor drive system but does not require an in-flight indication of magnetic particle detection to the flight crew. This proposal is necessary to provide early indications of drive system deterioration allowing appropriate flight crew responses; this requirement exists in part 29. The proposal also adds a requirement that a means be provided to the flight crew to check the function of each chip detector electrical circuit so that proper function of the system can be easily determined.

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 USC § 3501 et seq.).

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 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. In conducting these analyses, the FAA has determined that this proposed rule: (1) would generate benefits that justify its costs and is not a "significant regulatory action" as defined in the Executive Order 12866, (2) is not

"significant" as defined in DOT's Regulatory Policies and Procedures, (3) would not have a significant impact on a substantial number of small entities, and (4) would lessen restraints on international trade. These analyses, available in the docket, are summarized below:

This proposed rule would impose no or negligible compliance costs on rotorcraft manufacturers or users because the proposed changes would codify current industry practices. In addition, it would eliminate an applicant's need to apply for an exemption to the maximum weight requirement for a future part 27 type certificate and thereby save between $10,000 and $18,000 in paperwork costs for each eliminated exemption application.

Safety benefits would arise as manufacturers develop new, heavier part 27 rotorcraft (that would be based on the most recent part 27 standards) to replace some older part 27 rotorcraft certificated to earlier standards. For example, these safety benefits would accrue to some Emergency Medical Service (EMS) operators. The increased weight would allow some EMS's to increase their fuel loads and effective ranges to carry all of the necessary medical equipment and passengers. The EMS's must now limit fuel loads and their effective ranges to remain under the current 6,000-pound maximum weight.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily and disproportionately burdened by Federal regulations. The RFA requires a Regulatory Flexibility Analysis if a

proposed rule is expected to have a significant (positive or negative) economic impact on a substantial number of small entities.

The proposed rule would primarily affect rotorcraft manufacturers and users. As none of the affected entities are small entities under the Department of Transportation's criteria, the FAA has determined that the proposed rule would not have a significant impact on a substantial number of small entities because there are no "small entity" rotorcraft manufacturers as defined by DOT Order 2100.14A.

International Trade Impact

The proposed rule would not constitute a barrier to international trade, including the export of U.S. rotorcraft into the United States. Instead, the changes would maintain harmonized certification procedures of the FAA with those of the JAA and thereby have no appreciable effect on trade.

Federalism Implications

The proposed regulations herein would 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 12866, October 4, 1993, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Unfunded Mandates Reform Act

This 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.

THE PROPOSED AMENDMENTS

In consideration of the foregoing, the FAA proposes to amend 14 CFR part 27 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. Section 27.1(a) is revised to read as follows:

§ 27.1 Applicability.

(a) This part prescribes airworthiness standards for the issue of type certificates, and changes to those certificates, for normal category rotorcraft with maximum weights of 7,000 pounds or less and nine or less passenger seats.

* * * * *

3. Section 27.2 is amended by redesignating the introductory text as paragraph (a), revising the references (a), (b), and (c) in the introductory text to read (1), (2), and (3); redesignating paragraphs (a) through (d) as paragraphs (a)(1) through (a)(4), redesignating paragraphs (d)(1) and (d)(2) as (a)(4)(i) and (a)(4)(ii), and adding a new paragraph (b) to read as follows:

§ 27.2 Special retroactive requirements.

* * * * *

(b) For rotorcraft with a certification basis established prior to (insert date 30 days after date of publication of the final rule in the Federal Register)--

(1) The maximum passenger seat capacity may be increased to eight or nine provided the applicant shows compliance with all the airworthiness requirements of this part in effect (insert date 30 days after date of publication of the final rule in the Federal Register).

(2) The maximum weight may be increased to greater than 6,000 pounds provided--

(i) The number of passenger seats is not increased above the maximum number previously certificated on [insert date 30 days after date of publication of the final rule in the Federal Register], or

(ii) The applicant shows compliance with all of the airworthiness requirements of this part in effect on [insert date 30 days after date of publication of the final rule in the Federal Register].

4. Section 27.610 is amended by revising the title and by adding a new paragraph (d) to read as follows:

§ 27.610 Lightning and static electricity protection.

* * * * *

(d) The electrical bonding and protection against lightning and static electricity must--

(1) Minimize the accumulation of electrostatic charge;

(2) Minimize the risk of electric shock to crew, passengers, and service and maintenance personnel using normal precautions;

(3) Provide an electrical return path, under both normal and fault conditions, on rotorcraft having grounded electrical systems; and

(4) Reduce to an acceptable level the effects of lightning and static electricity on the functioning of essential electrical and electronic equipment.

5. A new § 27.805 is added to read as follows:

§ 27.805 Flight crew emergency exits.

(a) For rotorcraft with passenger emergency exits that are not convenient to the flight crew, there must be flight crew emergency exits, on both sides of the rotorcraft or as a top hatch, in the flight crew area.

(b) Each flight crew emergency exit must be of sufficient size and must be located so as to allow rapid evacuation of the flight crew. This must be shown by test.

(c) Each flight crew emergency exit must not be obstructed by water or flotation devices after an emergency landing on water. This must be shown by test, demonstration, or analysis.

6. Section 27.807 is revised to read as follows:

§ 27.807 Emergency exits.

(a) *Number and location.*

(1) There must be at least one emergency exit on each side of the cabin readily accessible to each passenger. One of these exits must be usable in any probable attitude that may result from a crash;

(2) Doors intended for normal use may also serve as emergency exits, provided that they meet the requirements of this section; and

(3) If emergency flotation devices are installed, there must be an emergency exit accessible to each passenger on each side of the cabin that is shown by test, demonstration, or analysis to;

(i) Be above the waterline; and

(ii) Open without interference from flotation devices, whether stowed or deployed.

(b) *Type and operation.* Each emergency exit prescribed by paragraph (a) of this section must--

(1) * * *

(2) Have simple and obvious methods of opening, from the inside and from the outside, which do not require exceptional effort;

(3) Be arranged and marked so as to be readily located and opened even in darkness; and

(4) Be reasonably protected from jamming by fuselage deformation.

(c) * * * * *

(d) *Ditching emergency exits for passengers.* If certification with ditching provisions is requested, the markings required by paragraph (b)(3) of this section

must be designed to remain visible if the rotorcraft is capsized and the cabin is submerged.

7. Section 27.853 is amended in paragraph (a) by removing the word "flash" and inserting the word "flame" in its place and by removing and reserving paragraph (b).

8. Section 27.1027 is amended by redesignating existing paragraphs (a) through (d) as paragraphs (b) through (e); in redesignated paragraph (c)(2), by removing the reference to paragraph "(b)(3)" and inserting the reference to "(c)(3)" in its place; in redesignated paragraph (d), by removing the references to paragraph "(b)" and inserting "(c)" in their places; and by adding a new paragraph (a) to read as follows:

§ 27.1027 Transmissions and gearboxes: General.

(a) The lubrication system for components of the rotor drive system that require continuous lubrication must be sufficiently independent of the lubrication systems of the engine(s) to ensure lubrication during autorotation.

* * * * *

9. In § 27.1185, a new paragraph (d) is added to read as follows:

§ 27.1185 Flammable fluids.

* * * * *

(d) Absorbent materials close to flammable fluid system components that might leak must be covered or treated to prevent the absorption of hazardous quantities of fluids.

10. Section 27.1187 is revised to read as follows:

§ 27.1187 Ventilation and drainage.

Each compartment containing any part of the powerplant installation must have provision for ventilation and drainage of flammable fluids. The drainage means must be--

(a) Effective under conditions expected to prevail when drainage is needed, and

(b) Arranged so that no discharged fluid will cause an additional fire hazard.

11. In § 27.1305 a new paragraph (v) is added to read as follows:

§ 27.1305 Powerplant instruments.

* * * * *

(v) Warning or caution devices to signal to the flight crew when ferromagnetic particles are detected by the chip detector required by § 27.1337(e).

12. Section 27.1337(e) is revised to read as follows:

§ 27.1337 Powerplant instruments.

* * * * *

(e) Rotor drive system transmissions and gearboxes utilizing ferromagnetic materials must be equipped with chip detectors designed to indicate the presence of ferromagnetic particles resulting from damage or excessive wear. Chip detectors must--

(1) Be designed to provide a signal to the device required by § 27.1305(v); and

(2) Be provided with a means to allow crewmembers to check, in flight, the function of each detector electrical circuit and signal.

Issued in Washington, DC, on

EXECUTIVE SUMMARY

TITLE: Normal Category Rotorcraft Maximum Weight and Passenger Seat Limitations; Notice of Proposed Rulemaking (NPRM)

SUMMARY: This NPRM proposes to amend the airworthiness standards for normal category rotorcraft. This proposal would increase the maximum weight from 6,000 to 7,000 pounds and add a passenger seat limitation of nine. The increase in maximum weight is proposed to compensate for the weight growth that has resulted from increased regulatory requirements and to accommodate operational and design trends that have developed over time. The Joint Aviation Authorities (JAA) proposes to harmonize the European Joint Aviation Requirements (JAR) concurrently with this NPRM.

BACKGROUND: A manufacturer petitioned the FAA for an exemption from the normal category gross weight limit in November 1991. The exemption was denied due to a variety of technical reasons. However, the FAA decided to investigate the general issue of a future rule change in more detail. The FAA mailed a letter to interested parties asking for comments on the advisability of an increase in the gross weight limit. Due to the level of interest in the issue, the FAA held a public meeting on February 2, 1994. After the public meeting, the FAA and the JAA agreed that there was a demonstrated need to review the normal category gross weight and passenger applicability limit.

On January 20, 1995, the FAA issued a Notice in the Federal Register announcing the establishment of the Gross Weight and Passenger Issues for Rotorcraft Working Group. The FAA tasked the Working Group to "Review Title 14 Code of Federal Regulations part 27 and supporting policy and guidance material to determine the appropriate course of action to be taken for rulemaking and/or policy relative to the issue of increasing the maximum weight and passenger limitations for normal category rotorcraft." The working group included representatives from all parties that had expressed an interest in this subject.

The FAA has reviewed the ARAC recommendation and proposes that the gross weight limitation be increased to 7,000 pounds and that a passenger seat limitation of nine be added to § 27.1.

WHO WILL BE AFFECTED: Manufacturers, pilots, and occupants of normal category rotorcraft.

COSTS AND BENEFITS: The proposed rule would impose no or negligible compliance costs on rotorcraft manufacturers or users because the proposed changes would codify current industry practices. Also, the proposal would eliminate an applicant's need to apply for an exemption to the maximum weight requirement for a future type certificate and thereby save between $10,000 and $18,000 in processing costs. Safety benefits would arise as manufacturers develop new, heavier part 27 rotorcraft (based on the most recent part 27 standards) to displace some older part 27 certificated models. The increased weight would also benefit some Emergency Medical Services operating part 27 rotorcraft that now must limit fuel loads and their effective ranges to carry all of the necessary medical equipment and passengers while remaining under the current 6,000 pound maximum weight.

ENERGY IMPACT: The energy impact of the NPRM has been assessed in accordance with the Energy Policy and Conservation Act (EPCA), P.L. 94-163, and Interim Agency Guidelines. It has been determined that the NPRM is not a major regulatory action under the provisions of the EPCA.

ENVIRONMENTAL IMPACT: The environmental impact of the NPRM has been assessed in accordance with FAA Order 1050.1D, and it has been determined that the NPRM is not a major Federal action significantly affecting the environment.

Eric Bries
Acting Manager, Rotorcraft Directorate
Aircraft Certification Service

U.S. Department
of Transportation

**FEDERAL AVIATION
ADMINISTRATION**

Washington, D.C. 20591

PRELIMINARY REGULATORY EVALUATION, REGULATORY FLEXIBILITY DETERMINATION, AND TRADE IMPACT ASSESSMENT

FOR

PROPOSED RULE:

PART 27 AIRWORTHINESS STANDARDS: NORMAL CATEGORY ROTORCRAFT GROSS WEIGHT AND PASSENGER LIMITS

OFFICE OF AVIATION POLICY AND PLANS
AIRCRAFT REGULATORY ANALYSIS BRANCH, APO-320
Allen A. Mattes
March 1997

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EXECUTIVE SUMMARY

This regulatory evaluation examines the economic impact of several Federal Aviation Administration (FAA) proposed changes to 14 CFR part 27 Airworthiness Standards: Normal Category Rotorcraft (part 27). These proposed changes are based on Aviation Rulemaking Advisory Committee (ARAC) recommendations that the FAA is proposing to accept. One proposal would revise the type certification of part 27 rotorcraft by increasing the allowable maximum gross weight from the current 6,000 pounds to 7,000 pounds. Another proposal would establish a 9 passenger limit for all part 27 rotorcraft. A third proposal would establish retroactive criteria allowing existing rotorcraft to increase: (1) maximum weight to 7,000 pounds and passenger capacity to 8 or 9; or (2) to increase maximum weight to 7,000 pounds with no increase in passenger capacity. Finally, there are proposals to add one new part 27 section and to revise eight part 27 sections to apply to all new part 27 type certificated rotorcraft. However, these nine changes would only codify current industry practices.

The proposed changes to part 27 are in part intended to compensate for recent regulatory changes that have increased rotorcraft safety, but, also, have increased rotorcraft weight, thereby reducing potential payload. The proposed changes would also add passenger safety related requirements commensurate with allowing some rotorcraft to increase passenger capacity. The FAA has recently received three applications to exempt certain part 27 rotorcraft from the 6,000 pound limitation. With one exception, no part 29 rotorcraft currently being manufactured has a maximum gross weight of less than 8,000 pounds. As a rotorcraft's operations cost per pound of payload per mile decreases as the load approaches the rotorcraft's maximum carrying capacity, the absence of part 29 rotorcraft in the 6,000 pound to 8,000 pound range indicates that this gap may be filled more efficiently by rotorcraft certificated under part 27. The proposed rule would permit this and thereby provide cost savings to some manufacturers and operators. It would also eliminate an applicant's need to apply for an exemption for a future part 27 type certificate and, thereby, save between $10,000 and $18,000 in paperwork costs per eliminated exemption application. In addition, it would eliminate the time that the FAA would spend reviewing and

processing each exemption application. Thus, the FAA concludes that the proposed rule would impose negligible compliance costs and would generate some cost savings.

Additional safety benefits would occur as manufacturers develop new, heavier part 27 rotorcraft (that would be based on the most recent part 27 standards) to displace some older part 27 certificated models. The increased weight limitation would also benefit some part 27 Emergency Medical Services operators rotorcraft that now must limit fuel loads and/or effective ranges in order to carry all of the necessary medical equipment while remaining under the 6,000 pound maximum weight limitation.

For those reasons, the FAA has determined that the benefits of the proposed rule would exceed its costs.

The proposed rule would not have a significant impact on a substantial number of small entities and would not impact international trade, including the export of U.S. rotorcraft to foreign countries and the import of foreign rotorcraft

into the United States. Indeed, the same changes are being proposed for concurrent adoption in Joint Aviation Requirement (JAR) JAR-27 to maintain harmonization between U.S. and European airworthiness standards.

PART 27 AIRWORTHINESS STANDARDS: NORMAL CATEGORY ROTORCRAFT GROSS WEIGHT AND PASSENGER LIMITS

I. INTRODUCTION

This regulatory evaluation examines the economic impact of several proposed changes to 14 CFR part 27 (part 27) - Airworthiness Standards: Normal Category Rotorcraft. The proposal would revise part 27 by increasing the maximum allowable gross weight for normal category rotorcraft from 6,000 pounds to 7,000 pounds. It would also establish a 9 passenger limit for part 27 rotorcraft. No passenger limit is currently specified in part 27. An additional proposal would establish retroactive criteria allowing existing normal category rotorcraft to increase: (1) maximum weight to more than 6,000 pounds and to increase passenger capacity to 8 or 9; or (2) maximum weight to more than 6,000 pounds without increasing passenger capacity. Finally, it would add a new section 27.805 - Flight Crew Emergency Exits, and would make the following eight sections more stringent for all part 27 rotorcraft: (1) Section 27.610 - Lightning and Static Electricity Protection; (2) Section 27.807 -

Emergency Exits; (3) Section 27.853 - Compartment Interiors; (4) Section 27.1027 - Transmissions and Gearboxes: General; (5) Section 27.1185 - Flammable Fluids; (6) Section 27.1187 - Ventilation; (7) Section 27.1305 - Powerplant Instruments; and (8) 27.1337 - Powerplant Instruments. These proposed changes would apply to: (1) existing rotorcraft whose weight would be increased above 6,000 pounds or carry 8 or 9 passengers; and (2) all future new part 27 type certificated rotorcraft. In addition, the same changes are being proposed for concurrent adoption in Joint Aviation Requirements (JAR) JAR-27 to maintain harmonization between them and part 27.

II. BACKGROUND

The proposed changes to part 27 are in part intended to compensate for recent regulatory changes that have increased rotorcraft safety while increasing rotorcraft weight, thereby reducing potential payload. The proposed changes would also add passenger safety related requirements commensurate with allowing some rotorcraft to increase passenger capacity.

Currently, civil rotorcraft designed for a maximum gross weight of more than 6,000 pounds must either be type certificated under the transport category airworthiness standards of part 29 or be type certificated under the normal category airworthiness standards of part 27 with an exemption to the part 27 6,000 pound maximum weight limitation. Obtaining a part 29 type certificate for a relatively small rotorcraft (less than 8,000 pounds) is not, generally, an economically viable option because the cost of compliance with the requirements of part 29 is substantially higher than that of part 27. The principal reasons for this

cost differential are that part 29 imposes: (1) additional and more complex design requirements; (2) additional and more rigorous test requirements; and (3) additional and more sophisticated equipment. As a result, only one manufacturer has built a part 29 rotorcraft with a maximum gross weight less than 8,000 pounds.* Consequently, there is a rotorcraft product gap between the heaviest part 27 rotorcraft and the lightest part 29 rotorcraft.

The second method to obtain FAA approval is to apply for an exemption to the part 27 weight limitation. Recently, the FAA has received three applications (from Kaman Aerospace Helicopter for its K-1200; from McDonnell Douglas Helicopter Systems for its MD900; and from Agusta for its A109) to exempt these part 27 rotorcraft models from the 6,000 pound limit and to operate at weights up to 7,000 pounds.

Although part 27 has no specific limit to the maximum number of passengers allowed on a Normal Category Rotorcraft, the

* This helicopter is the BK117 manufactured by Eurocopter Deutschland GmBH. The BK-117-B-2 was certificated in 1992 at 7,389 pounds and the BK-117-C-1 was certificated in 1994

applicability requirements of 14 CFR 29.1(c) in which all rotorcraft with ten or more passenger seats must be certificated as transport category rotorcraft implicitly limits part 27 rotorcraft to 9 passengers. However, rotorcraft technology has effectively limited part 27 aircraft to a practical maximum of 7 passengers.

The FAA established the Aviation Rulemaking Advisory Committee (ARAC) in February 1991 under the Federal Advisory Committee Act to provide recommendations to the FAA on rulemaking related to aviation safety issues. The ARAC subsequently established the Rotorcraft Issues Group to deal with airworthiness standards for parts 27 and 29 rotorcraft. The FAA announced the establishment of the Rotorcraft Gross Weight and Passenger Issues Working Group (GWWG) under the ARAC Rotorcraft Issues Group through a Notice in the Federal Register (60 FR 4221, January 20, 1995). The GWWG was tasked to "Review Title 14 Code of Federal Regulations part 27 and the supporting policy and guidance material to determine the appropriate course of action to be taken for rulemaking and/or policy relative to the issue of increasing

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at 7,715 pounds. About 350 of these helicopters have been

the gross weight and passenger limitations for normal category rotorcraft." The GWWG includes representatives from rotorcraft manufacturers, Aerospace Industries Association (AIA), European Aerospace Manufacturers' Association (AECMA), Transport Canada, Joint Aviation Authorities (JAA), and the FAA Rotorcraft Directorate. This broad participation is consistent with FAA policy to involve all known interested parties as early as practicable in the rulemaking process.

Industry estimates of the gross weight necessary to accommodate 9 passengers were in the range of 8,000 to 8,500 pounds. Nevertheless, the GWWG proposed a new 7,000 pound limit for two reasons. First, increasing the limit to 7,000 pounds would allow current technology normal category rotorcraft to comply with recent stricter part 27 requirements that are difficult to meet within the 6,000 pound limit. Second, with possible incorporation of technology advances, a 7,000 pound limit may be adequate to accommodate a 9 passenger capacity in the future. Some GWWG members felt that a more thorough review of the

applicability requirements for all categories of rotorcraft should be completed before agreeing to a larger increase in the current Normal Category weight limit. Upon tasking the Applicability Sub-Group to conduct a complete review of the rotorcraft applicability requirements, the GWWG agreed that a limit of 7,000 pounds was appropriate for this proposed regulatory change. The FAA accepts this recommendation in this proposal.

Increasing the part 27 gross weight limit could eliminate the current 7 passenger practical limit for normal category rotorcraft; therefore, the GWWG concluded that a limited review of the current part 27 requirements was necessary.

Based on that review, the GWWG recommended several changes to part 27. These changes would introduce more stringent requirements to maintain safety while allowing increased weight and a practical limit to the number of passengers. Some of the resulting proposed eight changes would add current part 29 requirements to part 27 while others would involve strengthening the existing part 27 requirements

without necessarily adopting the specific part 29 requirements.

Participation by representatives of the JAA and AECMA in the GWWG has ensured that the proposals have the support of those organizations, and should allow the harmonization of part 27 and JAR-27 to be maintained. Identical proposals for the concurrent amendment of JAR-27 are being published by JAA. Maintaining harmonization and commonality between U.S. and European airworthiness standards would eliminate unnecessary differences between airworthiness requirements, thereby reducing manufacturers' certification costs.

III. COMPLIANCE COSTS

A. General Overview

Based on discussions with rotorcraft manufacturers, the FAA has determined that the proposed changes would impose no additional compliance costs because they reflect current industry equipment and design practices. In fact, the FAA estimates that the proposed rule would provide some minor cost reductions for manufacturers, operators, and the FAA. The FAA requests comments on any assumption or estimate in this Regulatory Evaluation. The following sections describe the proposed changes and their potential costs.

B. Section 27.1 - Applicability

The FAA proposes two changes to this section. The first proposed change would increase the maximum allowable gross weight for normal category rotorcraft from the current 6,000 pounds to 7,000 pounds. The increased weight would allow the carriage of increased payload and/or fuel. Thus, the 7,000 pound part 27 rotorcraft could be flown farther before refueling and/or could transport greater payloads than the current maximum 6,000 pound part 27 rotorcraft.

The higher allowable weight would likely increase the number of part 27 rotorcraft models available to some operators for certain types of operations. In general, the greater the number of models available, the greater the probability that a more cost-effective (i.e., more efficient) rotorcraft would be available for an operator's specific needs. In the absence of a 7,000 pound part 27 rotorcraft that would be the most cost effective model for some operations, operators currently have two options. The first option is to use a part 29 rotorcraft and operate it at significantly under its payload capacity. The second option is to use a 6,000 pound part 27 rotorcraft and fly or refuel it more frequently than a 7,000 pound part 27 rotorcraft in order to transport the same load.

Under the first option, the typical lowest maximum gross weights for part 29 rotorcraft are between 8,250 pounds and 8,800 pounds (see Footnote #1 for the exception). Although a part 29 rotorcraft can always transport less weight than its maximum payload, its efficiency increases as the maximum weight is approached. Transporting a weight that is

considerably less than the rotorcraft's maximum payload results in a relatively higher average payload transport cost per pound per mile because a larger portion of the fuel is used to transport the rotorcraft rather than the payload.

Under the second option, in order to carry additional weight, less fuel would be carried thereby reducing the rotorcraft's range. Consequently, transporting a load beyond the maximum capability of a 6,000 pound part 27 rotorcraft requires that the operator either: (1) fly the load in multiple trips; or (2) fly the load with reduced fuel and refuel at additional points enroute to the destination. Either choice generates transport inefficiencies (a higher average cost per pound per mile), requires more time to complete, and involves more takeoffs and landings. Finally, many maintenance and inspection requirements are triggered by the number of operating cycles or the number of operating hours and not by the number of miles flown. An increase in the number of takeoffs and landings could require the smaller 6,000 pound part 27 rotorcraft to undergo more maintenance checks than would a 7,000 pound part 27 rotorcraft for the same amount of cargo

days to grant or deny the petition, and the decision is published in the Federal Register. The proposed rule would eliminate both the applicant's and the FAA's additional paperwork associated with processing an exemption.

On the basis of discussions with industry, the FAA estimates that each exemption application avoided would save the public between 100 and 180 hours of engineering, legal, management review, and secretarial paperwork time. At an average total labor compensation cost of $100 per hour, between $10,000 to $18,000 would be saved per avoided application. The FAA cannot quantify the total industry cost savings because it cannot determine the overall number of existing or future rotorcraft models that would be affected. The FAA requests comments concerning the potential cost savings for individual applicants.

The second proposed change to section 27.1 would explicitly state the 9 passenger limit for a part 27 rotorcraft, which is implicit in section 29.1(c) where all rotorcraft with ten or more seats are defined to be transport category rotorcraft. On the basis that, as a practical matter, the

limitation currently exists, the FAA determines that there would be no incremental compliance costs for this proposed change to section 27.1.

C. Section 27.2(b) - Special Retroactive Requirements

The FAA proposes to add a new paragraph (e) that would permit an applicant to apply to increase an existing part 27 rotorcraft's gross weight above 6,000 pounds and to carry more than 7 passengers only if the rotorcraft would meet the requirements of both: (1) part 27 as it existed on the date that the concept paper for this working group was approved (February 21, 1995); and (2) the changes to part 27 proposed in this rulemaking. In addition, the proposed paragraph would permit an applicant to apply to increase an existing part 27 rotorcraft's gross weight above 6,000 pounds under its existing type certificate without meeting the changes to part 27 proposed in this rulemaking only if its passenger capacity remains the same as it was on February 21, 1996.

The FAA determines that there would be no compliance costs associated with these proposed changes. Requiring an

existing normal category rotorcraft to meet the current part 27 plus these proposed changes to part 27 in order to add both weight and passengers permits the requirements employed in the current exemption process to continue for those rotorcraft. As these proposed changes reflect current industry practice, the FAA anticipates that there would be no compliance cost. By allowing a rotorcraft to apply to increase its maximum allowable weight under its existing type certificate as long as it does not increase the number of passengers would expand this opportunity to rotorcraft not currently eligible for this application. Thus, any costs of applying for an exemption would be incurred voluntarily and would be more than offset by the expected revenue arising from an increased gross weight.

D. Section 27.610 - Lightning and Static Electricity Protection

The proposed change to this section would add the FAR 29.610(d) requirements for electrical bonding to the part 27 requirements. As this proposed requirement is current industry practice, the FAA estimates that there would be no incremental compliance costs.

E. Sections 27.805 and 27.807 - Emergency Exits

The proposed changes to these sections would include some of the requirements for emergency exits found in FAR/JAR 29.805 and .809. As compliance with these part 29 requirements is current industry practice, the FAA estimates that there would be no incremental compliance costs.

F. Section 27.853(a) and (b) - Fire Resistance of Interior Materials

The proposed changes to this section would require that the materials in interior compartments meet the flame resistance requirements in FAR 23.853(a), the requirements for part 23 airplanes type certificated prior to the development of commuter category airplanes. The current part 27 rule requires only that the materials be flash resistant. This proposed change would both reduce the potential for cabin interior materials to ignite as well as delay the fire spread and, thereby, increase the time available for passengers to evacuate safely during a post-accident fire. As compliance with this part 23 requirement is the current industry practice for part 27 rotorcraft, the FAA estimates that there would be no incremental compliance costs.

G. Section 27.1027 - Rotor Drive Oil Systems

The proposed change to this section would add the FAR 29.1027(a)(2) requirement that the oil system for components of the rotor drive system that require continuous lubrication must be sufficiently independent of the engine lubrication systems to insure safe autorotation. As compliance with this part 29 requirement is the current industry practice, the FAA estimates that there would be no incremental compliance costs.

H. Section 27.1185 - Absorbent Material

The proposed change to this section would add the FAR 29.1185(d) requirement that absorbent materials close to flammable fluid system components that might leak must be covered or treated to prevent the materials from absorbing hazardous quantities of fluids. This proposed change would help to prevent fires from starting as well as help to reduce the rate of fire propagation. As compliance with this part 29 requirement is current industry practice, the FAA estimates that there would be no incremental compliance costs.

I. Section 27.1187 - Engine Compartment Fluid Drains

The proposed change to this section would add the FAR 29.1187 requirement for fluid drains in each compartment containing any part of the powerplant. These drains would need to be effective and be arranged so that no discharged fluid would cause an additional fire hazard. In addition, the proposal would change the title of this section to "Ventilation and Drainage." As compliance with this part 29 rule is current industry practice, the FAA estimates that there would be no incremental compliance costs.

J. Section 27.1305 - Transmission Gearbox Chip Detector Cockpit Indication

The proposed change to this section would add the FAR 29.1305(22) requirement that a warning device be present to signal to the flightcrew when ferromagnetic particles are detected by the chip detector.

K. Section 27.1337 - Transmission Gearbox Chip Detector Cockpit Indication

The proposed change to this section would add the FAR 29.1337(e) requirement that rotor drive system transmissions and gearboxes must have chip detector systems that signal the flight crew when ferromagnetic particles have been detected. It also would require that crewmembers be able to check, in flight, the function of each detector electrical circuit and signal. As these proposed requirements are current industry practice, the FAA estimates that there would be no incremental compliance costs.

K. Summary

In conclusion, the FAA has determined that the proposed changes would impose no additional compliance costs because they reflect current industry equipment and design practices, but invites appropriate data or views from commenters.

IV. BENEFITS

The principal safety benefit of the proposed rule would derive from the relaxation of the part 27 weight limitation. The FAA believes that this relaxation would encourage applicants to take advantage of this new market by developing new part 27 rotorcraft models that would incorporate safety improvements and would displace some older part 27 type certificated models. As that evolution occurs, new rotorcraft model certifications would be based on the most recent part 27 standards. Thus, the proposal would likely improve the overall safety level of the general rotorcraft fleet beyond what it would have been in the absence of the proposal.

A secondary safety benefit from the proposed weight relaxation would be a small reduction in the number of take-offs and landings for certain rotorcraft operations (see p. 11 of this Regulatory Evaluation). As take-offs and landings are, statistically, the most hazardous part of

rotorcraft flight, any reduction in their numbers would increase safety.

Another safety benefit, although not directly related to rotorcraft safety, is that the 7,000 pound part 27 rotorcraft would have a greater range for a given payload than would a 6,000 pound part 27 rotorcraft. This factor is important for Emergency Medical Services (EMS) rotorcraft which, typically, carry a considerable amount of fairly heavy medical equipment (oxygen tanks, gurneys, etc.) plus the emergency medical person(s). As a result, the current part 27 weight restriction limits the amount of fuel several EMS rotorcraft models can carry, which, in turn, limits their ranges. An increase in the part 27 rotorcraft's allowable weight would permit these EMS rotorcraft to carry more fuel (and/or additional medical equipment) and, thereby, increase their ranges and/or provide better emergency care for the victim. This increased range is particularly crucial in the western United States where a victim may have to be transported hundreds of miles to the closest appropriate hospital. Finally, the increased allowable weight may permit the transport of an additional

victim - an important consideration for more rapid transportation of multiple accident victims.

This additional weight/increased range consideration is also important for rotorcraft that are pressed into service to combat forest fires. The ability to carry more fuel on each mission would extend the time available to stay on station for combating forest fires.

The FAA holds that incorporating the nine proposed changes would ensure that future rotorcraft models continue to include these safety equipment and design features. Although there is only a remote possibility that future rotorcraft manufacturers would not install these equipment and design features, codifying them in part 27 would clarify the intent of the current requirements and assure that future designs would attain the intended level of safety.

Finally, establishing explicit technical requirements for an exemption would allow certain existing normal category rotorcraft to increase their allowable weight with no

reduction in safety. As a result, these rotorcraft would be permitted to operate at their most efficient levels.

Therefore, the FAA concludes that the potential safety benefits from this proposal would be greater than its costs.

V. REGULATORY FLEXIBILITY ASSESSMENT

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily and disproportionately burdened by government regulations. The RFA requires a Regulatory Flexibility Analysis if a proposed or final 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, prescribes standards for complying with RFA requirements in FAA rulemaking actions. The Order defines "small entities" in terms of size, "significant economic impact" in terms of annualized costs, and "substantial number" as a number that is not less than 11 and that is more than one-third of the small entities subject to a proposed or final rule. The proposed rule would affect manufacturers and modifiers of future type certificated Normal Category Rotorcraft. For aircraft manufacturers, Order 2100.14A defines a small entity as one with 75 or fewer employees and a significant economic impact of at least $19,500 (1996 dollars) in annualized costs.

The FAA has determined that the proposed rule would not have a significant economic impact on a substantial number of small manufacturers or modifiers because the annualized incremental costs or savings of the proposed rule would be less than $19,500 per applicant.

VI. INTERNATIONAL TRADE IMPACT ASSESSMENT

Consistent with the Administration's belief in the general superiority, desirability, and efficiency 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 Sates companies doing business in foreign markets, and foreign companies doing business in the United States.

This proposed 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 would be a positive step toward removing impediments to international trade.

FAA Action

FAA Action

[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 27

[Docket No. 29247; Notice No. 98-4]

RIN 2120-AF33

Normal Category Rotorcraft Maximum Weight and Passenger Seat Limitation

AGENCY: Federal Aviation Administration (FAA), DOT

ACTION: Notice of proposed rulemaking (NPRM)

SUMMARY: This notice proposes to amend the airworthiness standards for normal category rotorcraft. This proposal would increase the maximum weight limit from 6,000 to 7,000 pounds and add a passenger seat limitation of nine. The increase in maximum weight is proposed to compensate for the increased weight resulting from additional regulatory requirements, particularly recent requirements intended to improve occupant survivability in the event of a crash. These changes are intended to update current airworthiness standards to provide the safety standards for normal category rotorcraft of 7,000 pounds or less.

DATES: Comments must be received on or before September 23, 1998.

ADDRESSES: Submit comments in triplicate to the FAA, Office of the Chief Counsel, Attention: Rules Docket (AGC-200), Docket No. 29247, Room 915G, 800 Independence Avenue SW, Washington, DC 20591. Comments submitted must be marked

Docket No. 29247. 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 on Federal holidays.

FOR FURTHER INFORMATION CONTACT: Lance Gant, Rotorcraft Standards Staff, Rotorcraft Directorate, Aircraft Certification Service, Fort Worth, Texas 76193-0110, telephone (817) 222-5114, fax 817-222-5959.

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. Specifically, the FAA invites comments and data relating to the top hatch emergency exit proposed in new section 14 CFR 27.805(a). 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 (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's webpage at http://www.access.gpo.gov/su_docs/aces/aces140.html 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.

Persons interested in being placed on a mailing list for future NPRM's should request from the above office a copy of Advisory Circular No. 11-2A, NPRM Distribution System, that describes the application procedure.

Background

Operational and design trends for normal category rotorcraft are approaching the current maximum weight limitations. This proposal would increase the maximum weight limitation from 6,000 to 7,000 pounds and would add a passenger seat limit of nine.

History

Since 1956, the FAA has based the distinction between normal and transport category rotorcraft certification requirements on the certificated maximum weight of the aircraft. Initially, the FAA set the upper weight limit for normal category rotorcraft at 6,000 pounds, based on the spectrum of existing and anticipated designs at that time. The 6,000-pound weight threshold and associated airworthiness standards have served the industry well for over 40 years.

In the 1970's, manufacturers began certificating new light twin-engine rotorcraft in the 4,000 to 6,000 pound weight class. Some single-engine models were also converted to twin-engines. This trend continues. Meanwhile, the FAA certification regulations evolved, gradually adding more stringent safety requirements that ultimately caused permanent increases in empty weight. The high cost of certification of transport category rotorcraft, the increased stringency of the current 14 CFR part 27 (part 27) regulations, and the trend toward modification of existing models have resulted in several normal category helicopters nearing the current 6,000-pound maximum weight limitation.

Increasing the 6,000-pound weight limit for normal category rotorcraft was not formally discussed with the FAA until November 1991. At that time, a manufacturer petitioned the FAA for a regulatory exemption to allow a rotorcraft to exceed the 6,000-pound maximum weight limit specified for normal category rotorcraft. A summary of the petition was subsequently

published in the Federal Register (57 FR 4508, February 5, 1992) for public comment. Comments were few and divided. While some commenters were in favor of the petition, others expressed the view that a weight change should not be permitted without considering increased regulatory stringency and/or a limit on the number of passengers. The FAA determined that the petition did not provide adequate justification nor did it show that a grant of exemption would be in the public interest. The FAA denied the petition but stated in the denial that a further study of the issues would be in the public interest.

The diversity of comments prompted the FAA to investigate the general issue of a future rule change in more detail. By letter dated April 1992 to rotorcraft manufacturers and trade associations, the FAA asked interested parties to comment on the advisability of increasing the current 6,000-pound maximum weight limitation. They were also asked to comment on safety criteria that should be associated with a weight limitation increase. Approximately 30 commenters responded to the request. Although these responses contained no specific objections to a future regulatory increase in the maximum allowable weight, the commenters articulated a wide range of views regarding the scope of such a revision.

Due to the level of interest in this issue, the FAA held a public meeting on February 2, 1994, immediately following the Helicopter Association International (HAI) Convention in Anaheim, California. All interested parties were given the opportunity to present their views to help determine a course of action that would be in the best interest of the rotorcraft aviation community. Consequently, the FAA and the Joint Aviation Authorities (JAA) determined that there was a need to review the maximum weight and passenger seat limitation for normal category rotorcraft.

Although not a part of this proposal, the FAA Rotorcraft Directorate identified a need to reevaluate the certification standards for rotorcraft at the low end of the maximum weight spectrum as a result of information gathered at this meeting. A joint FAA/JAA/Industry Working Group was tasked to reevaluate the maximum weight and seat limitation issues for all rotorcraft, including requirements for the low passenger capacity rotorcraft.

ARAC Involvement

By notice in the Federal Register (60 FR 4221, January 20, 1995), the FAA announced the establishment of the Gross Weight and Passenger Issues for Rotorcraft Working Group (GWWG). The GWWG was tasked to "Review Title 14 Code of Federal Regulations part 27 and supporting policy and guidance material to determine the appropriate course of action to be taken for rulemaking and/or policy relative to the issue of increasing the maximum weight and passenger seat limitations for normal category rotorcraft."

The GWWG includes representatives from all parties that have expressed an interest in this subject through submittal of comments to the FAA or through the public meeting process. The GWWG includes representatives from Aerospace Industries Association of America (AIA), Association Europeene des Constructeurs de Material Aerospatial (AECMA), the European JAA, Transport Canada and the FAA Rotorcraft Directorate. Additionally, representatives from the small rotorcraft manufacturers were consulted for their views by the GWWG. This broad participation is consistent with FAA policy to involve all known interested parties as early as practicable in the rulemaking process. The GWWG first met in February 1995 and has subsequently met for a total of six meetings.

Statement of the Issues

Members of the GWWG agreed that there is a valid need to increase the normal category weight limitation and that nine passengers is appropriate for the normal category rotorcraft passenger seat limitation. A nine-passenger seat limitation is consistent with the passenger seat limitation of normal category airplanes certificated under part 23. The decision to include a nine-passenger seat limitation to § 27.1 is not a new idea. Based on the results of FAA Public Meetings held in 1979 and 1980, NPRM 80-25 (45 FR 245, December 18, 1980) included a proposal to limit part 27 rotorcraft to nine passengers. This passenger seat limitation was not adopted in the final rule because there were no projections for rotorcraft with a maximum weight of 6,000 pounds or less to have more than nine passenger seats.

Considerable discussions during initial GWWG meetings concerned whether additional regulatory requirements should be promulgated to accommodate the increased maximum weight limitations. Although part 27 has always permitted rotorcraft to be certificated to carry up to nine passengers, the current weight limitation has limited practical designs to seven passengers. No normal category rotorcraft to date has been certified and manufactured to carry more than seven passengers. The proposed increase in maximum weight will allow the practical design and production of helicopters that will carry nine passengers. Several sections of part 27 were reviewed to evaluate the possible need for additional regulatory requirements to support this potential increase of two passengers.

The GWWG considered the possible need for additional regulatory requirements if the proposed change to part 27:

1. Related to safety for addition of passengers beyond 7;

2. Related to safety for increased weight; or

3. Resulted in little or no increase in cost or weight.

Based on these criteria, necessary changes were identified.

Industry estimates of the maximum weight necessary to accommodate nine passengers were in the range of 8,000 to 8,500 pounds. Nevertheless, the GWWG agreed to the new limit as 7,000 pounds based on several considerations. Increasing the limit to 7,000 pounds would address the problem of some current normal category rotorcraft remaining within the part 27 weight limitation while complying with the recent increases in part 27 regulatory requirements. In addition, the GWWG agreed that, with possible incorporation of technological advances, a 7,000-pound limit may be adequate to accommodate a nine-passenger capacity in the future.

The proposed additional regulatory requirements included here were prompted by this potential increase in passenger capacity. Therefore, the GWWG recommended a limit of seven passengers for previously certificated rotorcraft (regardless of maximum weight) unless the certification basis is revised and the rotorcraft complies with part 27 at the amendment level of this proposal. The GWWG also agreed that an applicant may apply for an amended or supplemental type certificate to increase maximum weight above 6,000 pounds without complying with this proposed amendment (other than §§ 27.1 and 27.2) provided that the original seating capacity of the rotorcraft is not increased above that certificated on [insert date 30 days after date of publication of the final rule in the Federal Register].

The GWWG presented its recommendation to ARAC. The ARAC subsequently recommended that the FAA revise the normal category rotorcraft airworthiness standards. The Joint Aviation Authorities (JAA) proposes to harmonize the Joint Aviation Requirements (JAR)

concurrently with this NPRM.

FAA Evaluation of ARAC Recommendation

The FAA has reviewed the ARAC recommendation and proposes that the maximum weight limitation be increased to 7,000 pounds and that a passenger seat limitation of nine be added to § 27.1

Section-by-Section Discussion of the Proposals

This NPRM contains proposals to amend part 27. The FAA proposes the following changes to accommodate an increase in the current maximum weight and passenger carrying capability. The proposal also includes additional safety standards identified as imposing little or no increase in cost or weight.

Section 27.1 Applicability

This proposal would revise § 27.1(a) to increase the current maximum weight from 6,000 to 7,000 pounds and to add a nine-passenger seat limitation for normal category rotorcraft. The increase in maximum weight is intended to compensate for increased weight resulting from additional regulatory requirements, particularly recent requirements intended to improve occupant survivability in the event of a crash.

Section 27.2 Special retroactive requirements

This proposal would add a new paragraph (b) to § 27.2 requiring compliance with the part 27 amendments, up to and including this amendment, at the time of application for any normal category rotorcraft for which certification for more than seven passengers is sought. This would only apply to changes in type design for already type certificated rotorcraft, since newly type certificated rotorcraft would be required to meet the current part 27 requirements.

Additionally, the proposal would allow a previously certificated rotorcraft to exceed the 6,000-pound maximum weight limit provided that no increase in passenger capacity is sought beyond that for which the rotorcraft was certificated as of (insert date 30 days after date of publication of the final rule in the Federal Register). Compliance with all the requirements of the existing certification basis, plus any other amendments applicable to the change in type design, would have to be demonstrated at the increased maximum weight.

Section 27.610 Lightning and static electricity protection

This proposal would add to § 27.610 the requirement to provide electrical bonding of all metallic components of the rotorcraft. Bonding is necessary to provide an electrical return path for grounded electrical systems, to minimize the accumulation of static charge, to minimize the risk of electric shock to occupants as well as service and maintenance personnel, and to minimize interference with the operation of electrical and avionic systems caused by lightning and the discharge of static electricity.

Section 27.805 Flight crew emergency exits

This proposal would add a new § 27.805 requirement for flight crew emergency exits, similar to § 29.805, to facilitate rapid evacuation of the flight crew after an emergency ground or water landing.

27.807 Passenger emergency exits

Section 27.807 would be revised to clarify the provisions on emergency exits to ensure that each passenger has ready access to an emergency exit on each side of the fuselage. The proposal also clarifies that normal-use doors may serve as emergency exits but must meet the requirements for emergency exits. This is not stated in the current rule. The proposal adds

requirements that emergency exits must open from both inside and outside the rotorcraft and that opening the exit must not require exceptional effort.

Section 27.853 Compartment interiors

This proposal enhances the requirements of § 27.853 for fire protection of compartment interiors by replacing the current provision that allows limited use of materials that are only flash resistant with a requirement that all materials be at least flame-resistant. This change is necessary to ensure safety in the larger passenger cabins and is consistent with the existing requirements for normal category airplanes.

Section 27.1027 Transmissions and gearboxes: General

This proposal would add to § 27.1027 the requirement that the lubrication system for components of the rotor drive system (that require continuous lubrication) must be sufficiently independent of the engine lubrication system to ensure adequate lubrication during autorotation. This requirement already exists in of § 29.1027(a)(2). The lubrication systems of the engines and of the rotor drive system are usually designed to be independent, but this independence is not specifically required by current regulations. This proposal would require sufficient independence to ensure adequate lubrication during autorotation.

Section 27.1185 Flammable fluids

This proposal would add to § 27.1185 the requirement that absorbent materials be covered or treated to prevent absorption of hazardous quantities of flammable fluids when such materials are installed close to flammable fluid system components that might leak. This requirement is necessary to minimize fire hazards in rotorcraft that may have absorbent material for insulation of the passenger cabin, some of which will be adjacent to fuel or hydraulic fluid

lines, and already exists in § 29.1185(d).

Section 27.1187 Ventilation and drainage

This proposal would add to § 27.1187 a requirement for drainage of powerplant installation compartments. Section 27.1187 currently requires these compartments to be ventilated, but there is no requirement for them to be provided with drains as exists in § 29.1187(a)(1) and (2). Drainage of powerplant compartments is necessary to minimize fire hazards by ensuring that leakage of flammable fluids does not result in hazardous accumulations of those fluids near potential ignition sources.

Sections 27.1305 Powerplant instruments and 27.1337 Powerplant instruments

This proposal adds to §§ 27.1305 and 27.1337 a requirement that chip detectors fitted in the rotor drive system also provide an indication to the flight crew when magnetic particles are detected. The present rule requires a chip detector to be fitted in the rotor drive system but does not require an in-flight indication of magnetic particle detection to the flight crew. This proposal is necessary to provide early indications of drive system deterioration allowing appropriate flight crew responses; this requirement exists in part 29. The proposal also adds a requirement that a means be provided to the flight crew to check the function of each chip detector electrical circuit so that proper function of the system can be easily determined.

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 USC § 3501 et seq.).

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 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. In conducting these analyses, the FAA has determined that this proposed rule: (1) would generate benefits that justify its costs and is not a "significant regulatory action" as defined in the Executive Order 12866, (2) is not "significant" as defined in DOT's Regulatory Policies and Procedures, (3) would not have a significant impact on a substantial number of small entities, and (4) would lessen restraints on international trade. These analyses, available in the docket, are summarized below:

This proposed rule would impose no or negligible compliance costs on rotorcraft manufacturers or users because the proposed changes would codify current industry practices. In addition, it would eliminate an applicant's need to apply for an exemption to the maximum weight requirement for a future part 27 type certificate and thereby save between $10,000 and $18,000 in paperwork costs for each eliminated exemption application.

Safety benefits would arise as manufacturers develop new, heavier part 27 rotorcraft (that would be based on the most recent part 27 standards) to replace some older part 27 rotorcraft certificated to earlier standards. For example, these safety benefits would accrue to some Emergency Medical Service (EMS) operators. The increased weight would allow some EMS's

to increase their fuel loads and effective ranges to carry all of the necessary medical equipment and passengers. The EMS's must now limit fuel loads and their effective ranges to remain under the current 6,000-pound maximum weight.

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 sale of the business, organizations, and governmental jurisdictions subject to regulation." To achieve that principle, the RFA requires agencies to solicit and consider flexible regulatory proposals and to explain the rational for their actions. The RFA 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 as described in the RFA. However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

The FAA conducted the required review of this proposal and determined that it would not have a significant economic impact on a substantial number of small entities. The proposed rule is expected to produce annualized incremental cost savings of $10,000 to $18,000 per applicant.

While this would be beneficial to rotorcraft manufacturers, it would be unlikely to affect either the competitiveness or solvency of small businesses. Accordingly, pursuant to the Regulatory Flexibility Act, 5 U.S.C.605 (b), the Federal Aviation Administration certifies that this rule will not have a significant economic impact on a substantial number of small entities.

International Trade Impact

The proposed rule would not constitute a barrier to international trade, including the export of U.S. rotorcraft into the United States. Instead, the changes would maintain harmonized certification procedures of the FAA with those of the JAA and thereby have no appreciable effect on trade.

Federalism Implications

The proposed regulations herein would 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 12866, October 4, 1993, it is determined that this proposal would 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 would 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.

List of Subjects in 14 CFR Part 27

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

THE PROPOSED AMENDMENTS

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR part 27 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. Section 27.1(a) is revised to read as follows:

§ 27.1 Applicability.

(a) This part prescribes airworthiness standards for the issue of type certificates, and changes to those certificates, for normal category rotorcraft with maximum weights of 7,000 pounds or less and nine or less passenger seats.

* * * * *

3. Section 27.2 is amended by redesignating the introductory text and paragraphs (a), (b), (c), (d) introductory text, (d)(1), and (d)(2) as paragraphs (a) introductory text, (a)(1), (a)(2), (a)(3), (a)(4) introductory text, and (a)(4)(i) and (a)(4)(ii), respectively.

§ 27.2 Special retroactive requirements.

* * * * *

(b) For rotorcraft with a certification basis established prior to (insert date 30 days after date of publication of the final rule in the Federal Register)--

(1) The maximum passenger seat capacity may be increased to eight or nine provided the applicant shows compliance with all the airworthiness requirements of this part in effect (insert

date 30 days after date of publication of the final rule in the Federal Register).

(2) The maximum weight may be increased to greater than 6,000 pounds provided--

(i) The number of passenger seats is not increased above the maximum number previously certificated on [insert date 30 days after date of publication of the final rule in the Federal Register], or

(ii) The applicant shows compliance with all of the airworthiness requirements of this part in effect on [insert date 30 days after date of publication of the final rule in the Federal Register].

4. Section 27.610 is amended by revising the title and by adding a new paragraph (d) to read as follows:

§ 27.610 Lightning and static electricity protection.

* * * * *

(d) The electrical bonding and protection against lightning and static electricity must--

(1) Minimize the accumulation of electrostatic charge;

(2) Minimize the risk of electric shock to crew, passengers, and service and maintenance personnel using normal precautions;

(3) Provide an electrical return path, under both normal and fault conditions, on rotorcraft having grounded electrical systems; and

(4) Reduce to an acceptable level the effects of lightning and static electricity on the functioning of essential electrical and electronic equipment.

5. A new § 27.805 is added to read as follows:

§ 27.805 Flight crew emergency exits.

(a) For rotorcraft with passenger emergency exits that are not convenient to the flight crew, there must be flight crew emergency exits, on both sides of the rotorcraft or as a top hatch, in the flight crew area.

(b) Each flight crew emergency exit must be of sufficient size and must be located so as to allow rapid evacuation of the flight crew. This must be shown by test.

(c) Each flight crew emergency exit must not be obstructed by water or flotation devices after an emergency landing on water. This must be shown by test, demonstration, or analysis.

6. Section 27.807 is revised to read as follows:

§ 27.807 Emergency exits.

(a) Number and location.

(1) There must be at least one emergency exit on each side of the cabin -readily accessible to each passenger. One of these exits must be usable in any probable attitude that may result from a crash;

(2) Doors intended for normal use may also serve as emergency exits, provided that they meet the requirements of this section; and

(3) If emergency flotation devices are installed, there must be an emergency exit accessible to each passenger on each side of the cabin that is shown by test, demonstration, or analysis to;

(i) Be above the waterline; and

(ii) Open without interference from flotation devices, whether stowed or deployed.

(b) Type and operation. Each emergency exit prescribed by paragraph (a) of this section must--

(1) Consist of a movable window or panel, or additional external door, providing an unobstructed opening that will admit a 19-by 26-inch ellipse;

(2) Have simple and obvious methods of opening, from the inside and from the outside, which do not require exceptional effort;

(3) Be arranged and marked so as to be readily located and opened even in darkness; and

(4) Be reasonably protected from jamming by fuselage deformation.

(c) Tests. The proper functioning of each emergency exit must be shown by test.

(d) Ditching emergency exits for passengers. If certification with ditching provisions is requested, the markings required by paragraph (b)(3) of this section must be designed to remain visible if the rotorcraft is capsized and the cabin is submerged.

7. Section 27.853 is amended in paragraph (a) by removing the word "flash" and inserting the word "flame" in its place and by removing and reserving paragraph (b).

8. Section 27.1027 is amended by redesignating paragraphs (a) through (d) as paragraphs (b) through (e); in redesignated paragraph (c)(2), by removing "(b)(3)" and adding "(c)(3)" in its place; in redesignated paragraph (d), by removing "(b)" each place it appears and adding "(c); and by adding a new paragraph (a) to read as follows:

§ 27.1027 Transmissions and gearboxes: General.

(a) The lubrication system for components of the rotor drive system that require continuous lubrication must be sufficiently independent of the lubrication systems of the engine(s) to ensure lubrication during autorotation.

* * * * *

9. In § 27.1185, a new paragraph (d) is added to read as follows:

§ 27.1185 Flammable fluids.

* * * * *

(d) Absorbent materials close to flammable fluid system components that might leak must be covered or treated to prevent the absorption of hazardous quantities of fluids.

10. Section 27.1187 is revised to read as follows:

§ 27.1187 Ventilation and drainage.

Each compartment containing any part of the powerplant installation must have provision for ventilation and drainage of flammable fluids. The drainage means must be--

(a) Effective under conditions expected to prevail when drainage is needed, and

(b) Arranged so that no discharged fluid will cause an additional fire hazard.

11. In § 27.1305 a new paragraph (v) is added to read as follows:

§ 27.1305 Powerplant instruments.

* * * * *

(v) Warning or caution devices to signal to the flight crew when ferromagnetic particles are detected by the chip detector required by § 27.1337(e).

12. Section 27.1337(e) is revised to read as follows:

§ 27.1337 Powerplant instruments.

* * * * *

(e) Rotor drive system transmissions and gearboxes utilizing ferromagnetic materials must be equipped with chip detectors designed to indicate the presence of ferromagnetic particles resulting from damage or excessive wear. Chip detectors must--

(1) Be designed to provide a signal to the device required by § 27.1305(v); and

Be provided with a means to allow crewmembers to check, in flight, the function of each detector electrical circuit and signal.

Issued in Washington, DC, on June 9, 1998.

Thomas E. McSweeny

Director, Aircraft Certification Service

April 27, 2004

Mr. John D. Swihart, Jr.
Helicopter Association International
7313 Janetta Drive
Fort Worth, TX 76180

Dear Mr. Swihart:

This letter acknowledges receipt of a recommendation from the Aviation Rulemaking Advisory Committee (ARAC) on Rotorcraft Issues.

In February 2002, you submitted a recommendation for rulemaking on Performance Handling Qualities. The recommendation was in response to a task supported by the Performance and Handling Qualities Requirements Working Group.

I wish to thank the ARAC and the working group for the resources they spent in developing the recommendation. We consider your submittal of the recommendation as completion of the task. Therefore, we have "closed" the task, placed the recommendation on the ARAC website at http://www.faa.gov/avr/arm/arac/index.cfm, and have forwarded it to the Rotorcraft Directorate for review and decision. We will continue to keep you apprised of our efforts on the ARAC recommendation at the regular ARAC meetings.

Sincerely,

/S/
Anthony F. Fazio
Executive Director, Aviation Rulemaking
Advisory Committee