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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 61

[Docket No. FAA-2002-13744; SFAR No. 73-1]

RIN: 2120-AH94

Robinson R-22/R-44 Special Training And Experience Requirements

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: This final rule extends the expiration date of Special Federal Aviation Regulation (SFAR) 73. SFAR 73 requires special training and experience for pilots operating the Robinson model R-22 or R-44 helicopters in order to maintain the safe operation of Robinson helicopters. It also requires special training and experience for certified flight instructors conducting student instruction or flight reviews in R-22 or R-44 helicopters.

EFFECTIVE DATE: December 31, 2002.

FOR FURTHER INFORMATION CONTACT: Robert J. O'Haver, Operations Branch, AFS-820, General Aviation and Commercial Division, 800 Independence Ave. SW., Washington, DC 20591; Telephone: (202) 267-7031.

SUPPLEMENTARY INFORMATION:

Availability of Rulemaking Documents

You can get an electronic copy using the Internet by taking the following steps:

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

(2) On the search page type in the last five digits (13744) of the Docket number shown at the beginning of this notice. Click on "search."

(3) On the next page, which contains the Docket summary information for the Docket you selected, click on the document number of the item you wish to view. Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act statement in the Federal Register published on April 11, 2000 (Volume 65, Number 70; Pages 19477-78) or you may visit http://dms.dot.gov.

You can also get an electronic copy using the Internet through the Office of Rulemaking's web page at http://www.faa.gov/avr/armhome.htm or the Government Printing Office's web page at http://www.access.gpo.gov/su_docs/aces/aces140.html.

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

Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA) requires the FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. Therefore, any entity that has a question regarding this document may contact a local FAA office, or the person listed under FOR

FURTHER INFORMATION CONTACT. You can find out more about SBREFA on the Internet at our web page, www.gov/avr/arm/sbrefa.htm. If you have questions, send us an e-mail at 9-AWA-SBREFA@faa.gov.

Background

Part 61 of Title 14 of the Code of Federal Regulations (14 CFR part 61) details the certification requirements for pilots and flight instructors. Particular requirements for pilots and flight instructors in rotorcraft are found in Subparts C through G, and Appendix B of part 61. These requirements do not address any specific type or model of rotorcraft. However, in 1995 the Federal Aviation Administration (referred to as "we") determined that specific training and experience requirements are necessary for the safe operation of Robinson R-22 and R-44 model helicopters.

The R-22 is a 2-seat, reciprocating engine powered helicopter that is frequently used as a low-cost initial student training aircraft. The R-44 is a 4-seat helicopter with operating characteristics and design features that are similar to the R-22. The R-22 is the smallest helicopter in its class and incorporates a unique cyclic control and rotor system. Certain aerodynamic and design features of the aircraft cause specific flight characteristics that require particular pilot awareness and responsiveness.

We found that the R-22 met 14 CFR part 27 certification requirements and issued a type certificate in 1979. The small size and relatively low operating costs of this helicopter made it popular as a training or small utility aircraft. Thus, a significant number of the pilots operating R–22 helicopters were relatively inexperienced. Prior to issuance of SFAR 73, the Robinson R-22 experienced a higher number of fatal accidents due to main rotor/airframe contact than other piston-powered helicopters. Many of these accidents were caused by low rotor revolutions per minute (RPM) or low "G" conditions that resulted in mast bumping or main rotor-airframe

contact accidents. Aviation safety authorities attributed this to pilot error by inexperienced pilots.

In our analysis of accident data, we found that apparently qualified pilots may not be properly prepared to safely operate the R-22 and R-44 helicopters in certain flight conditions. We determined that additional pilot training, originally established by SFAR 73, as modified in SFAR 73-1, continues to be needed for the safe operation of these helicopters.

Previous Regulatory Action

To address the safety issues, on March 1, 1995, we published SFAR 73 (60 FR 11256). This SFAR required certain experience and training to perform pilot-in-command (PIC) and/or certified flight instructor (CFI) duties. SFAR 73 was issued on an emergency basis, with an expiration date of December 31, 1997. On November 21, 1997 (62 FR 62486), we published an NPRM to extend SFAR 73 to December 31, 2002, with a minor amendment. The final rule extending SFAR 73 to December 31, 2002 was published on January 7, 1998 (63 FR 660). On November 14, 2002, we published an NPRM proposing to extend SFAR 73 an additional 5 years to December 31, 2007 (67 FR 69106). This final rule responds to the comments received on the most recent NPRM and extends SFAR 73 to March 31, 2008.

FAA response to comments on the NPRM that proposed extension of SFAR 73

We received six comments in response to the NPRM that was published in the Federal Register on November 14, 2002. Two of the comments were from the Robinson Helicopter Company. The other four comments were from three individuals. Several of the commenters addressed similar issues. Our response to the comments follows.

1. Should we exclude the Robinson R44 helicopter from the requirements of SFAR 73?

Mr. Frank Robinson, President of the Robinson Helicopter Company; Mr. Sherwood A. Bresler, Chief Accident Investigator for the Robinson Helicopter Company; Mr. Timothy C. Tucker, an FAA Designated Pilot Examiner for helicopters; and Mr. Martin E. Weaver requested the FAA to remove the R44 helicopter from SFAR 73. The principal arguments in favor of removing the R44 helicopter are:

- The Robinson Helicopter Company has made significant changes to the R44 helicopter since 1995 that reduce its vulnerability to low-G mast bumping and low-RPM rotor stall.
- The flight and handling characteristics of the R44 are closer to the Bell 206 Jetranger helicopter than the smaller R22.
- The FAA revised the Helicopter Practical Test Standards for private, commercial and flight instructor certificates to include "Low RPM Recovery" and "Low G" conditions.

Response:

Since the issuance of SFAR 73, there has been a drop in the accident rate of Robinson helicotpers associated with low "G" maneuvers (low rotor RPM) resulting in main rotor/tailboom contact. Between the publication of SFAR 73 in 1995 and the first extension of the SFAR in 1997 no accidents occurred in the R-22 or R-44 that were related to low rotor RPM and tailboom/main rotor contact. There have been two accidents since the first extension in 1997.

Design changes in the R-44 have improved the aircraft performance and handling characteristics of recently manufactured R-44 helicopters but these changes were not applied to older R-44s. The Robinson R-44 helicopter is generally of the same design as the R-22, and although larger uses a teetering rotor system with a high mounted tail rotor. These design characteristics make the rotorcraft susceptible to mast bumping and fuselage rolling tendencies under low-G conditions. Since the design characteristics of the R-44 are similar to the R-22, we believe that SFAR 73 should apply to both models. We further believe that SFAR 73 has been effective in improving the safe operation of these helicopters. SFAR 73 will continue to apply to the R-22 and the R-44.

2. Should we modify SFAR 73 to allow flight training for student pilots in the R-22 and R-44 before requiring the specific training called for in SFAR 73?

Mr. Martin E. Weaver asked us to change the wording in Section 2, paragraph (a)(1) from "...no person may manipulate the controls of a Robinson..." to "...no person may solo or perform duties as pilot-in-command of a Robinson..." and paragraph (a)(2) from "...may not manipulate the controls of a Robinson..." to "...may not solo or perform duties as pilot-in-command of a Robinson...". Mr. Weaver states that the current rule does not consider the effectiveness of providing the special training to someone with no experience in helicopters. He believes it would be better to wait until the student pilot has some flight experience with helicopter flight controls and basic understanding of aerodynamic principles before learning the specific limitations established in SFAR 73.

Response:

We reviewed this issue after the initial release of SFAR 73 and found that continuous awareness training was preferable to changing the fundamental requirement of the rule. Flight instructors who routinely provide initial flight training in the R-22 begin discussing mast bumping preventive procedures and hazards of low-G maneuvers early in the training program. Qualified instructors have found that continuing education throughout the training program reinforces the precautions that need to be learned. Early training on these skills and knowledge can begin on a very basic level and increase in detail and difficulty as the student develops the appropriate knowledge, skill, and experience. We will therefore continue to require continuous awareness training on mast bumping preventive procdures and hazards of low-G maneuvers.

3. Should we extend the flight review requirements from 12 to 24 months for the R22 and the R44?

Mr. Weaver believes that extending the flight review required by paragraphs 2(b)(1)(ii) and 2(b)(2)(ii) of the SFAR to 24 months would not increase the accident rate.

Response:

We believe requiring an annual flight review improves the safe operation of these helicopters. The requirements for the flight review in the R-22 helicopter were established by the R-22 Flight Standardization Board (FSB) Report dated February 15, 1995. This report states in

paragraph 8.2, "All pilots who wish to act as pilot in command of a Robinson R-22 aircraft should complete a flight review as required by FAR part 61.56 in a Robinson R-22 model helicopter." We believe that an annual review of the areas addressed by SFAR 73 is necessary.

4. Should we reduce the required hours in helicopters from 200 to 150?

Mr. Martin Thysell believes that 200 hours of helicopter experience required by paragraph 2(b)(1)(i) of the SFAR may not be required if a substantial part of the flying has been in the Robinson R-22. He recommends changing the language that states "...has had at least 200 flight hours in helicopters, at least 50 flight hours of which were in the Robinson R-22..." to "...has had at least 200 flight hours in helicopters, at least 50 flight hours of which were in the Robinson R-22 or at least 150 hours in helicopters, at least 100 flight hours of which were in the Robinson R-22..."

Response:

The recommended change, if adopted, would reduce the total number of required flight hours for a qualified R-22 flight instructor from 200 flight hours to 150 flight hours if 100 hours were acquired in a Robinson R-22. The commenter does not state any safety benefit that would result from the proposed change. We believe a clear relationship exists between pilot inexperience in helicopters and main rotor to airframe contact accidents. In 23 of the 30 fatal accidents originally investigated that led to the implementation of SFAR 73, the pilots apparently

manipulating the controls had less than 200 flight hours in helicopters. We have determined that 200 flight hours are needed for the safe operation of either helicopter.

5. Should we reduce the extension of SFAR 73 from 5years to 2years?

Mr. Sherwood A. Bresler of the Robinson Helicopter Company believes that 2 years is sufficient time to permanently address regulations and policies about helicopter pilot and flight instructor training and experience requirements.

Response: We are working on regulations and policies to govern pilot and certified flight instructor training and experience, based on experience gained from SFAR 73. We intend to implement these in 2007 or before. Considering the time needed to complete the public rulemaking process, other agency priorities and available resources, we believe the 5-year extension to coincide with new rules is appropriate. Also, we are adding 3 months so the expiration of the SFAR does not coincide with the end of the year.

6. Should helicopter pilots and flight instructors be allowed to use fixed wing time in meeting requirements for helicopter ratings?

Mr. Bresler believes we should harmonize our rules with international standards that do not allow fixed wing time in meeting requirements for helicopter ratings. He believes this change would eliminate the need for SFAR 73.

Response: Mr. Bresler's suggestion would require a substantial change to FAA qualification standards for all helicopter training. Such a suggestion is beyond the scope of this rulemaking. As discussed above, we are working on a separate project dealing with the regulations and policies governing pilot and certified flight instructor training and experience. We will evaluate Mr. Bresler's comment in that project.

Regulatory Evaluation Summary

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that a Federal agency may propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (19 U.S.C. 2531-2533) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis for U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of $100 million or more annually (adjusted for inflation).

In conducting these analyses, FAA has determined this final rule: (1) will generate benefits that exceed costs, is not a "significant regulatory action" as defined in section 3(f) of

Executive Order 12866, and is not "significant" as defined in DOT's Regulatory Policies and Procedures; (2) will not have a significant economic impact on a substantial number of small entities; (3) will not constitute a barrier to international trade; and does not impose an unfunded mandate on state, local, or tribal governments, or on the private sector.

This final rule will extend the requirements of SFAR 73-1, which will expire on December 31, 2002, for an additional 5 years. It will impose costs on those receiving instruction in Robinson model R-22 and R-44 helicopters. Affected individuals will be required to receive additional model-specific training and experience for each model of Robinson helicopter before they can be certificated. The individuals affected include flight instructors and students seeking to be certified to operate Robinson model helicopters. These individuals can avoid the costs of this final rule by receiving their instruction in a helicopter other than a Robinson model. However, they will not be certificated for Robinson model helicopters.

Regarding benefits, this final rule will continue the observed reduction in the number of fatal accidents that occur in Robinson helicopters associated with low "G" maneuvers that can result in main rotor contact with the airframe. Prior to the issuance of SFAR 73 there were 15 accidents and 24 fatalities due to main rotor contact with the airframe. Since the SFAR was issued in 1995, however, there have been only two accidents and only one fatality involving R-22 or R-44 aircraft associated with low "G" operations and main rotor contact with the airframe.

Even though two accidents involving low "G" operations have occurred since SFAR 73 was extended in 1997, we find that the potential safety benefits still exceed costs and justify the adoption of this final rule.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation." To achieve that principle, the RFA requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale 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 agency determines 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.

This final rule will require students and rated pilots seeking to conduct student instructions or flight reviews in a Robinson helicopter to incur added costs. Thus, the requirements of the SFAR impact individuals rather than entities. For these reasons, the FAA certifies that the rule will not have a significant economic impact on a substantial number of small operators.

Trade Impact Assessment

The Trade Agreement Act of 1979 prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards.

The final rule imposes costs on those receiving instruction on Robinson helicopters. These costs have been in effect for almost 7 years and apparently have not affected sales of the aircraft. The FAA has assessed the potential effect of the final rule and determined that it will have a neutral impact on foreign trade and, therefore, create no obstacles to the foreign commerce of the United States.

Unfunded Mandates Assessment

The Unfunded Mandates Reform Act of 1995 (the Act) is intended, among other things, to curb the practice of imposing unfunded Federal mandates on State, local, and tribal governments. Title II of the Act requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of $100 million or more (adjusted annually for inflation) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action."

This final rule does not contain such a mandate. The requirements of Title II do not apply.

Federalism Implications

This final rule will not have substantial direct effects on the states, on the relationship between the Federal 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, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

International Civil Aviation Organization (ICAO) and Joint Aviation Regulations

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to comply with ICAO Standards and Recommended Practices to the maximum extent practicable. The FAA has determined that this final rule does not conflict with any international agreement of the United States.

Paperwork Reduction Act

The OMB control number assigned to the collection of information for this final rule is 2120-0021.

Conclusion

For the reasons previously discussed in the preamble, the FAA has determined that this SFAR is not significant under Executive Order 12866. Based on the findings in the Regulatory Flexibility Determination and the International Trade Impact Analysis, the FAA certifies that this final rule will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. This SFAR is not considered significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979).

Plain Language

In response to the June 1, 1998 Presidential Memorandum regarding the use of plain language, the FAA re-examined the writing style currently used in the development of regulations. The memorandum requires federal agencies to communicate clearly with the public. We are interested in your comments on whether the style of this document is clear, and in any other suggestions you might have to improve the clarity of FAA communications that affect you. You can get more information about the Presidential memorandum and the plain language initiative at http:www.plainlanguage.gov.

List of Subjects in 14 CFR Part 61

Aircraft, Aircraft pilots, Airmen, Airplanes, Air safety, Air transportation, Aviation safety, Balloons, Helicopters, Rotorcraft, Students.

The Final Rule

In consideration of the foregoing, the Federal Aviation Administration amends part 61 of Title 14 of the Code of Federal Regulations (14 CFR part 61) as follows:

PART 61 - CERTIFICATION: PILOTS, FLIGHT INSTRUCTORS, AND GROUND INSTRUCTORS

1. The authority citation for part 61 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701-44703, 44707, 44709-44711, 45102-45103, 45301-45302.

2. Revise section 3 of SFAR No. 73 to read as follows:

SPECIAL FEDERAL AVIATION REGULATIONS

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SPECIAL FEDERAL AVIATION REGULATION No. 73 - ROBINSON R-22/R-44 SPECIAL TRAINING AND EXPERIENCE REQUIREMENTS

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3. Expiration date. This SFAR terminates on March 31, 2008, unless sooner superceded or rescinded.

Issued in Washington, D.C. on DEC 27

Marion C. Blakey
Administrator

Certified to be a True Copy
Vanessa Wilkins