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Part VI

**Department of
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Federal Aviation Administration

**14 CFR Parts 1, 43, 45, 61, 91, 133, and
135**

**Rotorcraft Regulatory Review Program
Amendment No. 5; Operations and
Maintenance; Final Rule**

Federal Register

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Parts 1, 43, 45, 61, 91, 133, and 135**

[Docket No. 24550; Amdts. 1-33, 43-25, 45-16, 61-77, 91-196, 133-9, and 135-20]

Rotorcraft Regulatory Review Program Amendment No. 5; Operations and Maintenance

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This rule amends and updates the operations and maintenance requirements pertaining to rotorcraft and establishes a new Class D rotorcraft-load combination. Amendments affect certain sections of Parts 1, 43, 45, 61, 91, 133 and 135 of the Federal Aviation Regulations that apply to rotorcraft.

EFFECTIVE DATE: January 6, 1987.

FOR FURTHER INFORMATION CONTACT: Marian Clemens or Thomas Stuckey, Project Development Branch (AFS-850), General Aviation and Commercial Division, Office of Flight Standards, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; Telephone (202) 267-8150.

SUPPLEMENTARY INFORMATION:

Background

On January 5, 1979, the Federal Aviation Administration (FAA) gave notice of its Rotorcraft Regulatory Review Program and invited all interested persons to submit proposals for consideration during a forthcoming Rotorcraft Regulatory Review Conference (Notice 79-1; 43 FR 23925). Such a Rotorcraft Regulatory Review Conference was held on December 10-14, 1979, in New Orleans, Louisiana. A subsequent Rotorcraft Regulatory Review Meeting was held August 16-20, 1980, in Washington, DC.

After the conference and meeting, the FAA developed plans to publish a series of five notices of proposed rulemaking. The first notice included proposals dealing with the applicability sections of Parts 27 and 29 of the Federal Aviation Regulations (FAR), plus Instrument Flight Rules (IFR) certification and icing criteria. These were subsequently adopted as a final rule effective March 2, 1983 (48 FR 4374; January 31, 1983). The second notice addressed airworthiness standards for type certification of normal and transport category rotorcraft. Amendments based upon that notice were subsequently

published in the *Federal Register* on November 6, 1984 (49 FR 44422), and were effective December 6, 1984. The third notice, which covers powerplant proposals, and the fourth notice, covering airframe proposals, are still in preparation.

These amendments, the fifth in the series, are based on Notice of Proposed Rulemaking (NPRM) No. 85-8 published in the *Federal Register* on March 13, 1985 (50 FR 10144). All interested persons have been given an opportunity to participate in the making of these amendments, and due consideration has been given to all matters presented.

Discussion of Comments

The public comments are discussed below on a section by section basis. The references following each discussion relate to proposals and committees associated with the Regulatory Review Conference.

Section 1.1 General definitions.

The proposal to amend § 1.1 by revising the definition of "rotorcraft-load combination" and defining a "Class D rotorcraft-load" received no adverse comments. It is adopted as proposed in Notice No. 85-8.

Ref: Proposals 4.506, 507, 526, 527, 532, and 534; Committee III.

Section 43.3 Persons authorized to perform maintenance, preventive maintenance, rebuilding, and alterations.

The proposed amendment would permit a Part 135 certificate holder that operates rotorcraft in remote sites to allow an appropriately trained and authorized pilot to perform preventive maintenance as defined in Part 1 of this chapter and as listed in Appendix A to Part 43. Commenters strongly support this proposal. Numerous exemptions to the current regulations that allow such maintenance have been in effect for some time. To date, preventive maintenance performed under these exemptions has been extremely successful without any known misuse and has resulted in reducing the operating cost of helicopters operating in remote areas.

One commenter suggests that the term "remote area" be further defined to prevent misuse of the intent of this authorization. A remote area can be considered as an area out of the way, far removed from normal support services, or not easily accessible by land or sea. For example, offshore oil derricks, villages in the tundra area of Alaska, and mining sites in the upper Sierra Nevada would normally be considered remote. Any additional

explanation is not appropriate for the regulations. Accordingly, § 43.3(h) is adopted as proposed.

Ref: Proposal 424; Committee III.

Section 43.15 Additional performance rules for inspections.

When this rule was initially proposed in Notice No. 85-8, the progressive inspection was inadvertently omitted. To correct this error, the word "progressive" was inserted in § 43.15(c)(3) between the words "100-hour" and "inspection."

Several commenters recommend that § 43.15(c) (2) and (3) be consolidated into one paragraph and that reference to aircraft type be changed to "a powered aircraft." Consolidation would not make the regulation any clearer. Emphasis on the fact that both reciprocating-engine-powered aircraft and turbine-engine-powered aircraft require runups will help to clarify the intent of the present rule, which does not explicitly address turbine-engine-powered aircraft. Thus, the structure of the proposed rule is retained.

Commenters also express the view that the proposal would add confusion as to who should actually runup and/or start the aircraft engine to perform the required runup. As proposed, the regulation could be interpreted as requiring that the person who does the runup be the same person who approves the aircraft for return to service, even though that person may not be qualified to run the engine or engines. The rule requires that the person approving an aircraft for return to service be the person who shall perform the runup to determine satisfactory performance in accordance with the manufacturer's recommendation. If that person is qualified to return the aircraft to service, that person should also be qualified to perform the runup as required. Two other commenters recommend that, for rotorcraft, the person performing the runup should be a qualified pilot. They argue that when the engines of a helicopter with a fully articulated rotor system are runup, safety dictates that a pilot should perform that runup in case the rotorcraft becomes airborne. The FAA disagrees. Experience has shown that a mechanic who can approve the return of the helicopter to service should be able to safely runup the helicopter, exercising normal caution and good judgment. Section 43.15(c) (2) and (3) is amended as proposed.

Ref: Proposal 429; Committee III.

Part 43, Appendix A—Major Alterations, Major Repairs, and Preventive Maintenance

All commenters referring to Part 43, Appendix A, strongly concur with the proposal, which would amend the Appendix by adding routine checks or replacement of fuel and oil strainers and filters and magnetic chip detectors under the category of preventive maintenance. The changes to Part 43, Appendix A, are adopted as proposed.

Ref: Proposals 431 and 432; Committee III.

Section 45.14 Identification of critical components:

One commenter proposes that the rule be amended to allow the omission of markings when the Administrator finds that a part is too small or that it is otherwise impractical to mark a part with any of the information required by the rule. The regulation for the marking of critical/life limited components is not new. The only change is that such marking must be made permanent and legible. The FAA has always recognized that some parts "on condition" and removed at overhaul due to wear, tolerance excesses, etc., are not suitable for permanent marking and do not have finite lives approved by the FAA. Further, such parts are not individually specified in the Maintenance Manual Limitations or Continued Airworthiness Document. Thus, such parts need not be permanently marked. Therefore, § 45.14 is amended as proposed.

Ref: Proposal 433; Committee III.

Section 61.3 Requirement for certificates, ratings, and authorizations.

It was the intent of the Rotor 5 review to include authority for Category II operations for rotorcraft. The NPRM inadvertently omitted some of the changes necessary to implement this new authorization; therefore, several changes have been made to the final rule. One such change is the removal of the word "airplane" and its replacement by the word "aircraft" in § 61.3(g). Another is the addition of Part 135 to the flush paragraph after paragraph (f)(2).

Section 61.21 Duration of Category II pilot authorization.

No public comments were received on § 61.21, and the rule is amended as proposed.

Section 61.55 Second-in-command qualifications.

The rule will extend the second-in-command pilot qualifications to include helicopters that are type certificated for more than one required pilot flight crewmember. The proposed rule refers

to "required flight crewmember." One commenter points out that unless the word "pilot" is inserted, the rule could be construed to include flight engineers. Since this is not the intent and the omission of the word "pilot" was unintentional, the FAA agrees with the suggestion and the rule is changed accordingly.

The portion of the rule pertaining to an "aircraft" simulator has been changed to "airplane" simulator to reflect the current rule. The FAA had proposed to permit the use of an "aircraft" simulator; however, the technology for helicopter simulation has not developed as rapidly as the technology for airplane simulation. The FAA will continue to develop guidelines for approval of rotorcraft simulation, and this issue will be addressed in another rulemaking action.

Ref: Proposal 438; Committee III.

Section 61.57 Recent flight experience: Pilot in command.

Section 61.67 Category II pilot authorization requirements.

Section 61.87 Requirements for solo flight.

Section 61.105 Aeronautical knowledge.

Section 61.107 Flight proficiency.

No public comments were received on § 61.57, § 61.67, § 61.87, § 61.105, or § 61.107, and they are amended as proposed.

Section 61.113 Rotorcraft rating: Aeronautical experience.

Regarding the requirements for a helicopter class rating for a private pilot's license, one commenter suggests that the number of takeoffs and landings required in paragraph (a)(1)(ii) should be reduced to five or, alternatively, that the phrase "en route phase of flight" should be deleted. According to the commenter, if each landing/takeoff operation is separated by an en route phase of flight, an undue economic burden would be placed on the student since "the majority of these operations will be airport-to-airport." The commenter also points out that in some parts of the western United States, suitable night landing areas may be separated by distances in excess of 50 miles.

The FAA has not accepted the requested change for the following reason: The proposed aeronautical experience requirements were discussed at the conference, and it was the consensus that these specific experience requirements are needed to adequately train and prepare a private pilot applicant for a class rating in present-

day rotorcraft. It should also be noted that ten takeoffs and landings are required for a private pilot's certificate in an airplane, which is less difficult to operate than a helicopter. It is the position of the FAA that, by increasing the level of aeronautical experience for helicopters, the agency is promoting increased levels of safety. The requirement for ten takeoffs and landings is therefore adopted in the final rule.

The phrase "en route phase of flight" is a necessary part of the regulation, designed to prevent the applicant from merely lifting the helicopter above a given spot, hovering, and then returning it to that spot to achieve the required number of takeoffs and landings. Eliminating the requirement for an "en route phase of flight" would enable the applicant to circumvent the need to demonstrate an ability to maneuver the helicopter successfully at night in all phases of flight.

This requirement will not result in an undue economic burden. Contrary to the assumption made by the commenter that the majority of these operations would be airport-to-airport, a "takeoff and landing separated by an en route phase of flight" could be comprised of a takeoff, a short flight in the vicinity of the takeoff point, and a landing at the same place as the takeoff. An example would be a flight around the landing pattern. The "en route phase of flight" is intended to relate to the need for certain piloting skills. Demonstration of these skills may be accomplished without flying over long distances. There is nothing in the regulation that requires an applicant to fly from one airport to another. The flight hours and maneuvers required in paragraph (a)(1)(ii) are necessary for safety and do not pose an unnecessary economic burden. Consequently, the rule is adopted as proposed.

An objection was raised to the proposed requirement for 15 hours of flight instruction in a gyroplane. This requirement is necessary to ensure a level of proficiency needed for safe operation of the aircraft. Accordingly, the proposed rule is adopted.

Ref: Proposals 448, 449, and 450; Committee III.

Section 61.125 Aeronautical knowledge.

No public comments were received on § 61.125, and it is amended as proposed.

Section 61.127 Flight proficiency.

This section sets forth the operations that must be performed successfully to demonstrate the flight proficiency

required to obtain a commercial pilot certificate. Among the maneuvers required for a helicopter commercial rating is rapid descent with power and recovery.

A number of objections were received regarding this rule. The commenters believe that a strong potential exists for an inexperienced student to be given a check ride by a check pilot not proficient in that particular helicopter. They express fear that this situation could lead to an accident in the event the maneuver is allowed to progress beyond reasonable limits. They question the benefit of requiring this maneuver during a check ride and suggest, alternatively, that settling with power be considered accomplished if the maneuver is signed in the student's log book by that student's instructor.

The FAA agrees that this maneuver may place the student and check pilot at undue risk. Under present Parts 27 and 29, neither the manufacturer nor the FAA demonstrates or evaluates entry or recovery from "settling with power" as part of the aircraft certification. Consequently, it is inappropriate to require the performance of an inflight maneuver that neither the manufacturer nor the FAA is required to observe during aircraft certification.

Delegation to the student's instructor of the FAA responsibility for ensuring that a certain level of flight proficiency has been attained is not the solution to this problem. Instead, the applicant must demonstrate the ability to recognize and recover from imminent entry into settling with power, rather than to actually enter the flight regime from which it may be difficult to recover.

Accordingly, the final rule incorporates this requirement.

Ref: Proposal 453; Committee III.

Section 61.131 Rotorcraft ratings: Aeronautical experience.

A commenter suggests that commercial helicopter pilot applicants be required to have instrument flight training. The FAA does not agree with this position for several reasons. First, most helicopter operations are and will be conducted in Visual Flight Rules (VFR) conditions. In addition, the flight characteristics of rotorcraft are such that, if weather conditions begin to deteriorate, a pilot may easily and rapidly adjust altitude and direction or, if necessary, find a suitable landing site. Encountering IFR conditions in a rotorcraft is therefore not analogous to the same situation in an airplane, where suitable landing sites are far less numerous and altitude restrictions may be greater. Furthermore, there are fewer rotorcraft properly equipped for

instrument flight than airplanes, making training and testing more difficult.

If a pilot wants to conduct operations in IFR conditions, the pilot can obtain an instrument rating. To require all commercial helicopter applicants to be trained in instrument flight would pose an unnecessary burden on the public.

Another commenter objects to the number of required hours for helicopter pilot-in-command flight. The commenter states that the requirements are reasonable for an upgrade from a private to a commercial certificate but excessive for a move from a commercial airplane to a commercial helicopter certificate. According to the commenter, most applicants will need more than 15 hours of flight instruction, and these hours are more important at this stage than pilot-in-command time. It is, therefore, suggested that the requirements be changed to 35 hours of flight instruction and 15 hours of pilot-in-command time.

Two commenters also state that the requirements for crosscountry helicopter flight are excessive, especially for those applicants who already have a commercial pilot certificate with an airplane rating. One of the commenters believes that the act of cross-country flying is not different in a helicopter than in an airplane and, therefore, the requirements should be relaxed for those applicants who hold a commercial pilot certificate with an airplane rating. The other suggests that, since helicopters are short-haul aircraft compared to airplanes, the 50 nautical mile requirement for cross-country flight should be reduced to 25 nautical miles.

The FAA does not concur with these suggestions. The requirements are necessary to demonstrate a proficiency commensurate with the subject rating. The current rule, which requires 10 hours of pilot-in-command time for commercial rotorcraft applicants, is outdated. In addition, as the world leader in training helicopter pilots, the United States is obligated to ensure that the terms of the International Civil Aviation Organization (ICAO) Convention are met. The requirement for 35 hours of pilot-in-command time is consistent with ICAO standards and is clearly reasonable for operations conducted by individuals accepting remuneration for their services.

The cross-country flight-time experience is introduced in these rules to align these minimums with ICAO standards. A cross-country flight in an airplane is not identical to a cross-country flight in a helicopter. A helicopter, with its different flight characteristics, is more affected by wind, which must be taken into

consideration during the flight planning process. The wind effect becomes more significant over longer distances. In addition, piloting a helicopter, without the aid of an autopilot, is clearly more challenging when the pilot is, at the same time, attempting to navigate cross-country. Thus, the requirement for cross-country flight for an airplane commercial certificate cannot be substituted for the helicopter cross-country flight requirement.

Another commenter objects to the aeronautical experience required of an applicant for a commercial pilot certificate with a gyroplane class rating. The FAA agrees with the commenter that the proposed minimum flight hours are excessive. The regulation as proposed would impose the same hour requirements for a gyroplane class rating as for a helicopter class rating: 50 hours of flight time in a gyroplane/helicopter; 15 hours of gyroplane/helicopter flight instruction time; and 35 hours of pilot-in-command time in a gyroplane/helicopter. The commenter has operated under an exemption to the requirements contained in paragraphs (b) (3) and (4) since 1983. The exemption reduces the respective requirements for a gyroplane class rating to: 25 hours of flight time in a gyroplane; 10 hours of flight instruction in a gyroplane; and 15 hours of pilot-in-command time in a gyroplane. In granting this exemption, the FAA determined that the requirements could be reduced without adversely affecting safety. The FAA now reaffirms this finding and has amended § 61.131(b) accordingly.

Ref: Proposal 454; Committee III.

Section 61.159 Rotorcraft rating: Aeronautical knowledge.

No public comments were received on § 61.159, and it is amended as proposed.

Section 61.161 Rotorcraft rating: Aeronautical experience.

Proposed § 61.161(b)(4) is clarified by adding the word "performing" before the phrase "the duties of a pilot in command." The remainder of § 61.161 is adopted as proposed.

Section 61.163 Rotorcraft rating: Aeronautical skill.

The portion of the proposed rule pertaining to an approved rotorcraft simulator or training device has been deleted. Helicopter simulation issues will be addressed in a separate rulemaking action.

Section 61.165 Rotorcraft rating; Additional category ratings.

Part 61, Appendix A—Practical Test Requirements for Airplane Airline Transport Pilot Certificates and Associated Class and Type Ratings

No public comments were received on § 61.165 or Appendix A. They are amended as proposed.

Part 61, Appendix B—Practical Test Requirements for Rotorcraft Airline Transport Pilot Certificates With a Helicopter Class Rating and Associated Type Ratings

The phrase "ground control approach" in proposed paragraph III(c) has been changed to "surveillance or precision radar approach" to agree with the terminology used in the Airman's Information Manual.

One commenter suggests that in paragraph I(d), the phrase "in accordance with operating limitations" be changed to "in accordance with the Rotorcraft Flight Manual procedures." The commenter notes that power assurance procedures are not operating limitations and are placed in the Rotorcraft Flight Manual in the normal procedures or performance section. The comment is valid, and the language of the final rule has been changed accordingly.

The utility of requiring circling approaches as part of the practical test requirements for rotorcraft airline transport pilot certificates was the subject of another comment. The commenter suggests deleting section III(d) based on the view that a circle-to-land maneuver after completion of an instrument approach is remarkably simple and hazard free.

The FAA does not accept this argument. Performing the circle-to-land maneuver after completion of an instrument approach procedure may not always be simpler in a helicopter than it is in an airplane, depending upon the airport environment, weather, and other traffic. A circling approach basically involves different procedures than straight-in approaches. It is, therefore, appropriate for the FAA to require a demonstrated proficiency in executing the maneuver.

A number of commenters strongly object to other maneuvers and procedures required for rotorcraft airline transport pilot ratings. They question the safety and practicality of performing such maneuvers as simulated engine failure and autorotative landings during takeoffs and landings; settling with power; and demonstration of certain emergency procedures. They argue that the FAA inspector on a check ride may

be inexperienced with the aircraft and, therefore, might not be able to ensure a safe recovery from these procedures. One commenter also notes that some insurance companies specifically exclude coverage of the aircraft if autorotative landings are involved. The commenters suggest that these maneuvers not be required during a check ride but, rather, that they be considered accomplished if there is an indication in the student's log book by that student's instructor pilot that the student has demonstrated adequate proficiency.

As mentioned in the discussion under § 61.127, the FAA agrees that settling with power should not be a requirement for any flight check. Therefore, the requirement of proposed Part 61, Appendix B IV(b), has also been changed so that the applicant need only demonstrate a recognition of and recover from imminent flight in the regime referred to as "settling descent with power."

The FAA maintains that all of the other maneuvers and procedures specified in Part 61, Appendix B, should be performed as part of the check ride. It is the responsibility of the FAA to ensure that an applicant for a particular rating is sufficiently competent to maintain a high degree of safety throughout all flight regimes. The standards are even higher for those certificates that enable the successful applicant to offer services for financial remuneration. Thus, it would be inappropriate for the FAA to delegate this responsibility and only require a log book entry by a flight instructor indicating adequate proficiency.

Furthermore, FAA flight inspectors are trained for flight check duties in the category of aircraft in which they conduct flight checks. Also, if an aircraft insurer objects to the routine performance of certain procedures, such as autorotative landings, a one-day waiver can usually be obtained to enable the applicant to take a flight check ride. Finally, if a maneuver or procedure is too dangerous for performance in the aircraft, a prohibition against such activity will appear in the flight manual. Therefore, this maneuver or procedure would not be required in that particular aircraft.

Ref: Proposals 434, 456, 458, 463, 464, 466, and 471 through 480; Committee III.

Section 91.2 Certificate of authorization for certain Category II operations.

No comments were received on the proposal to amend § 91.2 to afford small helicopter operators the opportunity of applying for Category II instrument

approach authorization. To clarify the application of § 91.2, the proposed language is revised in the final rule by substituting the word "aircraft" for "airplane" and by deleting the phrase "and helicopters," thereby excluding large helicopters as well as large airplanes from the authorization to deviate from the applicable requirements for Category II operations.

Section 91.23 Fuel requirements for flight in IFR conditions.

Section 91.23 requires 45 minutes of reserve fuel for all aircraft operating in IFR conditions and ceiling and visibility requirements of 2,000 feet and 3 miles for determining if an alternate airport is needed. The proposal contained in Notice No. 85-8 would reduce the IFR reserve fuel requirement for helicopters from 45 minutes to 30 minutes. It would also lower the minimum ceiling from 2,000 feet to 1,000 feet and lower the visibility minimum from 3 statute miles to 1 statute mile as criteria for determining if an alternate airport is needed.

Five of the seven commenters expressing views on this proposal fully support the proposed changes. One commenter, however, opposes the proposal, not only for lowering fuel reserve from 45 minutes to 30 minutes for helicopters, but for reducing the ceiling and visibility requirements used to determine whether an alternate airport is needed. This commenter expresses the view that the proposal would not only provide little usefulness to the helicopter operator, but would significantly lessen the degree of safety that exists with the current rules. The commenter suggests that helicopter operators do not need relief from the fuel requirement rules in § 91.23 for flight in IFR conditions but would be better served by modifying § 91.83 concerning alternate airport selection requirements. A suggested amendment to § 91.83 to accomplish this recommendation was proposed. Amendments to § 91.83 were not considered in Notice No. 85-8; therefore, any changes affecting the substance of that section are not within the scope of this rulemaking.

Another commenter, though supporting the reduction of the required fuel reserve to 30 minutes for helicopters, questions the reduction of the ceiling and visibility requirements that determine the need for an alternate airport.

The FAA has sufficient experience with operations conducted under Special Federal Aviation Regulation (SFAR) 29, which reduces the required

fuel reserve to 30 minutes for helicopters, to conclude that such a reduction will not lower the level of safety that has been established. This proposal would allow operators greater flexibility and utilization of their helicopters in the IFR environment. Accordingly, § 91.23(a)(3) is adopted as proposed.

The question of weather minimums defined in paragraph (b)(2) has been analyzed in some detail. Subsequent to the recommendations developed at the Rotorcraft Regulatory Review Conference and Review Meeting, the FAA undertook an investigation to examine methods of providing a data base of weather information pertinent to the requirements and qualifications for alternate airports. The increased risk of ceilings and visibilities falling below landing minimums at several U.S. cities was quantified as a function of lowered visibility and ceiling requirements defined in paragraphs (b)(2) (i) and (ii). The study utilized climatology data and weather deterioration models to calculate the probability that an airport would be below precision and nonprecision approach minimums. This investigation and study resulted in a report entitled "Weather Deterioration Models Applied to Alternate Airport Criteria," dated September 1981 (FAA-RD-81-92). The report reaches several preliminary but convincing conclusions. One of these directly related to the limitations defined in § 91.23(b)(2) is: "Any reduction in alternate airport requirements should be offset by limiting the duration of the flights for which the reduced requirements apply. It is recommended that reduced requirements only apply to flights whose flight time is two hours or less." The proposal in Notice No. 85-8 to reduce the ceiling and visibility requirement, however, has no such limitation of flight time as considered necessary by the report. In light of this evidence, the ceiling and visibility requirements for helicopters contained in paragraphs (b)(2) (i) and (ii) remain unchanged from the previous rule.

Ref: Proposals 483 and 484; Committee III.

Section 91.116 Takeoff and landing under IFR: General.

No unfavorable comments were received on the proposal to amend § 91.116 to establish a separate takeoff minimum of one-half mile visibility for helicopters. One commenter writing on this section recommends that takeoff minimums be established for all Part 91 operations as are landing minimums under this section. Such a suggestion is

not a part of the rotorcraft review and is outside the scope of this rulemaking.

Ref: Proposal 494; Committee III

Section 91.171 Altimeter system and altitude reporting equipment tests and inspections.

No comments were received on the proposed changes to § 91.171, and the rule is amended as proposed.

Part 91, Appendix A—Category II Operations: Manual, Instruments, Equipment and Maintenance

One of the purposes of the Rotor 5 rulemaking was to enable rotorcraft to perform Category II operations. In the NPRM, changes that would have made this new authority possible were inadvertently omitted. These changes are now included in the final rule. In Part 91, Appendix A, this change has been accomplished by removing the word "airplane" and replacing it with the word "aircraft" wherever "airplane" appears.

Section 133.1 Applicability.

One comment was received regarding the rotorcraft external load operations requirements of paragraph (c)(4). The commenter suggests eliminating the requirement for a Rotorcraft External-Load Operator Certificate for customer acceptance flights. The commenter argues that it is not logical for the FAA to eliminate the requirements for a Rotorcraft External-Load Operator Certificate during the development phase and demonstration of compliance with requirements of Parts 27, 29, and 133 and continue to require a Rotorcraft External-Load Operator Certificate for customer acceptance flights. The FAA disagrees with this reasoning. When a manufacturer offers such rides to the public, a higher degree of safety should be required. These customer passengers have a right to know that the safety of the flight on which they are about to embark has been reviewed by the FAA. The language proposed for paragraph (c)(4) is therefore adopted in the final rule.

Section 133.1(c)(5), as proposed, reiterated the exclusion of air carriers from rotorcraft external-load certification rules. The FAA has eliminated this exclusion from the final rule for the following reasons. The exclusion eliminates the applicability of all of Subpart B. Contained within Subpart B is § 133.19(a)(2), which requires aircraft to meet certification requirements of Subpart D, including § 133.43, Structures and design. Similarly, neither § 133.21 nor § 133.23 would be applicable to air carrier operators conducting external-load

operations. It would therefore be possible for a pilot who had met the proficiency and skill requirements under Part 135 to not have the experience, knowledge, and skill required to conduct safely an external-load operation under Part 133.

This is not the intent of the regulation. Air carrier and external-load operations are so dissimilar in function that a separate pilot certification process should be required of an air carrier when requesting external-load approval. For this reason, the proposed § 133.1(c)(5) has been deleted from the final rule.

Regarding proposed § 133.1(c)(6), one commenter suggests that only external-load operations conducted by a U.S. military organization for purely military purposes or for operations that cannot be conducted by a certificated commercial operator be exempt from the certification rules. The commenter cites a growing trend of use of public aircraft in competition with bona fide certificated commercial operators that is placing commercial operators at an alleged unfair disadvantage. The commenter further claims that when operations that could be performed by a commercial operator within the limits of his certificate are performed by the military, the public is entitled to the same level of safety. The commenter also suggests that the exclusion be removed from all other operators of public aircraft when conducting external-load operations.

In response to these suggested changes, the FAA notes that according to section 601 of the Federal Aviation Act of 1958, the Administrator is empowered to promote safety of flight of "civil aircraft," defined in section 101(17) of the Act as "any aircraft other than a public aircraft." Thus, public-use aircraft are, by definition, already excluded from § 133.1. The language of proposed § 133.1(c)(6) is not a change in existing regulations; it merely makes explicit the exclusion of public-use aircraft from applicability. The rule is adopted as proposed and renumbered as § 133.1(c)(5).

The number of persons to be carried in Class D rotorcraft-load combinations (§ 133.1(d)) is an issue for several commenters. One commenter states that "person" should be changed to "persons" so that the rule would provide for more than one person to be hoisted into and out of helicopters. The commenter, however, adds that these persons should be hoisted one at a time.

The rule, as written, does not limit the number of persons that can be hoisted into and out of helicopters. Therefore, no

change to the rule is necessary to respond to the commenter's point.

Regarding the number of persons that can be carried at one time, the FAA does not want to place any restrictions on this number at the present time. (See additional discussion on this issue in relation to proposed § 133.35(b)).

Ref: Proposals 4, 506, 507, 526, 527, 532, and 534; Committee III.

Section 133.11 Certificate required.

Section 133.13 Duration of certificate.

Section 133.21 Personnel.

Section 133.23 Knowledge and skill.

Section 133.25 Amendment of certificate.

Section 133.27 Availability, transfer, and surrender of certificate.

Section 133.31 Emergency operations.

No public comments were received on § 133.11, § 133.13, § 133.21, § 133.23, § 133.25, § 133.27, or § 133.31; they are amended as proposed.

Section 133.33 Operating rules.

A commenter suggests a new paragraph for this section. The purpose is to exclude the flight operations checks in § 133.33(c)(4) to (6) if the external load is to be moved only a short distance and at translational speeds just above a hover. The stated rationale is that loads are often carried only vertically with little or no horizontal movement. The commenter argues that the requirement for forward flight tests to determine controllability is superfluous and unnecessary in these cases.

The FAA does not agree that the suggested additional paragraph is needed. Revised § 133.33(c) clearly states that those flight operational checks will be required "as the Administrator determines are appropriate to the rotorcraft-load combination." Those flight tests that are "superfluous and unnecessary" would not be required.

The requirement in § 133.33(d)(1) for submitting and gaining approval for a plan for each rotorcraft external-load operation over congested areas presents problems for one commenter, who claims that much business would be lost to ground-based competition while the rotorcraft operator attempts to comply with the regulation. The commenter notes that the detail contained in the proposed regulations is more appropriate for an advisory circular or handbook. If some type of plan is deemed necessary, the commenter suggests that the helicopter operator be required to submit to the FAA district

office a plan that provides details of steps to be taken to conduct the operation without hazard to persons and property. The plan should be given to the district office before the operation, and the chief pilot or assistant chief pilot would have to certify that the operation would be conducted safely.

The FAA is responsible for developing procedures designed to ensure that external-load operations over congested areas are conducted safely and, through inspection and surveillance activities, to make certain that such procedures are followed. The FAA cannot delegate this oversight responsibility to those who actually conduct the operations; and consequently, has not adopted the suggested change.

The FAA also disagrees with the statement that the regulations go beyond the scope of a normal rulemaking and are more appropriate for an advisory circular or handbook. On the contrary, the regulation provides only guidelines on the types of components comprising a plan of the kind required. Details regarding specific information to be included in each component of the plan would be more appropriately the subject of an advisory circular or handbook. As for the issue of delay, the FAA will attempt to act on any submitted plan in an expeditious manner; however, the FAA cannot compromise safety to promote any given helicopter operation.

One commenter finds the language of § 133.33(b) too restrictive and suggests a change so that a person could conduct operations under IFR within the confines of a control zone when under the terms of a special VFR clearance or otherwise specifically approved by the Administrator. The rationale is that an external-load operation conducted in IFR conditions within a control zone is viable and safe under the terms of a special VFR clearance.

The FAA does not agree. The conduct of an external-load operation in IFR conditions is of sufficiently high risk that the FAA reserves the right to approve each operation. In fact, to clarify that the rule applies to all operations conducted under IFR and not only those in IFR meteorological conditions, the final rule has been changed to read "under IFR" instead of "in IFR conditions."

Finally, it should be noted that the operator has not been precluded from conducting operations under the terms of a special VFR clearance. However, approval from the Administrator will be required for a special VFR clearance to conduct external-load operations.

One commenter proposes the deletion of subparagraph (e) because, it is argued, § 91.119(d) specifically excludes

helicopters from "hard numbers." The FAA chooses not to delete this language because it serves as a clarification of the § 133.33 rules as they pertain to helicopter operations. The language of § 133.33 is consistent with § 91.119(d).

Section 133.35 Carriage of persons.

One commenter proposes the following addition to § 133.35(a):

"(5) Is a person which forms a part of or is associated with a Class D external-load."

This language is redundant with the provisions already in the rule. The language proposed in Notice No. 85-8 clearly permits a person to be associated with a Class D external-load. The final rule, therefore, is adopted as proposed.

There were a number of comments on § 133.35(b) regarding the persons to be carried as a Class D load and the distance over which they can be transported. One commenter states that there should be restrictions on how many persons should be carried at a time, suggesting that the number be limited to one. Others object to the carriage of any person in a hoist outside the aircraft for any distance.

In contrast, one commenter proposes an exclusion from paragraph (b) for those operations where persons are carried externally but are not intended to be hoisted inside the helicopter, such as the transfer of workers from a boat alongside a well-head to the well-head proper. Another commenter claims that it is too restrictive to limit a Class D load to one person, citing the successful experiments with 10-man Billy Pugh nets in rescue operations.

Proposed § 133.35(b) has been deleted on the basis that it is too restrictive to implement a blanket restriction on the number of persons carried as a Class D load and the distance over which these persons can be carried. Rather than specify limits in a regulation, the FAA will give appropriate guidance for Class D external-load operations to FAA district offices. The conditions under which an operator can carry persons externally will be included in that operator's approved Operations Specification. Proposed § 133.35(c) has been redesignated as § 133.35(b) in the final rule.

Ref: Proposal 532; Committee III.

Section 133.37 Crewmember training, currency, and testing requirements.

No public comments were received on § 133.37. However, there is a potentially confusing use of the terms "class" and "type" in paragraph (c) in conjunction with external-load operations. The

operation referred to relates to a particular class of external-load operation in a particular type of aircraft. No class of aircraft is intended to be specified. Accordingly, the rule has been amended to clarify the intent. Also, the proposed requirement for testing within the past 12 calendar months has been deleted.

Section 133.41 Flight characteristics requirements.

No public comments were received on § 133.41, and it is adopted as proposed.

Section 133.45 Operating limitations.

One commenter notes that the proposed rule would eliminate all multiengine helicopters certificated under Part 27 and those certificated as Category B under Part 29 from conducting Class D operations. The FAA has considered this effect; however, the appropriate level of safety dictates a higher standard of airworthiness requirements for conducting Class D operations. Therefore, the rule requires multiengine Category A rotorcraft for Class D operations.

Section 133.47 Rotorcraft load combination flight manual.

Section 133.51 Airworthiness certification.

Section 135.1 Applicability.

Section 135.23 Manual contents.

Section 135.39 Management personnel qualifications.

Section 135.117 Briefing of passengers before flight.

No public comments were received on § 133.47, § 133.51, § 135.1, § 135.23, § 135.39, or § 135.117, and they are adopted as proposed.

Section 135.159 Equipment requirements: Carrying passengers under VFR at night or under VFR-over-the-top conditions.

One commenter, noting that the requirements of § 135.159 serve to underline the need for training of helicopter pilots in instruments, proposes that a radio altimeter with a visual or aural warning be required in addition to gyroscopic flight instruments. No justification other than the need for instrument training is given by the commenter. No safety justification is given for the proposal. Further, requirement of such a radio altimeter was not included in Notice No. 85-8, and the public has not had the opportunity to comment on an item of equipment that could have a considerable economic impact on some

helicopter operators. Accordingly, the proposal is not accepted.

Another commenter points out that the proposed amendment to § 135.159 is somewhat confusing and does not completely solve the problem of determining what instruments are appropriate for the safe operation of helicopters under VFR at night. The FAA agrees, and the organization for § 135.159 has been modified. Though the regulation adopted is basically the same as proposed in Notice No. 85-8, the rule as adopted has been clarified to provide a clear and more meaningful presentation of the requirements.

Ref: Proposal 552; Committee III.

Section 135.167 Emergency equipment: Extended overwater operation.

No adverse comments were received on the proposal. One commenter, however, expresses concern that the proposed regulation did not recognize the high incidence of puncturing of liferafts on ditching. That commenter believes the text should stipulate an adequate design requirement versus the number of passengers anticipated. Proposed language was offered as an addition to the proposal to ensure that there were no sharp projections on the aircraft that might puncture survival equipment. The FAA has determined that this is not necessary. This regulation must be read in context with all of the regulations in this chapter, particularly those certification regulations for design requirements for aircraft and equipment. Such basic design requirements are adequate to ensure inadvertent puncturing of survival equipment or difficulties that could arise during a ditching situation.

Paragraph (b)(3)(i) was revised by deleting the word "approved." The FAA will provide guidelines for the contents of survival kits through advisory material rather than set specific standards to which all kits should conform. Air Carrier Operations Bulletin 9-59 provides such guidance. Section 135.167 is adopted as revised.

Ref: Proposal 555; Committee III.

Section 135.173 Airborne thunderstorm detection equipment requirements.

Section 135.181 Performance requirements: Aircraft operated over-the-top or in IFR conditions.

No public comments were received on § 135.173 or § 135.181, and they are adopted as proposed.

Section 135.223 IFR: Alternate airport requirements.

This proposal reduces helicopter fuel reserve requirements from 45 minutes to

30 minutes for flights in IFR conditions. It is closely related to proposed § 91.167 concerning fuel requirements for flight in IFR conditions. The commenters who oppose the reduction of such requirements in Part 91 also oppose the proposed change in the operating rules of Part 135. However, the majority of commenters strongly support the proposal. As previously stated, the FAA has gained sufficient experience in SFAR 29 operations to conclude that reducing the required fuel reserve to 30 minutes for helicopters will not compromise safety. Accordingly, § 135.223 is adopted as proposed.

Ref: Proposal 562; Committee III.

Section 135.227 Icing conditions: Operating limitations.

No adverse comments were received on this proposal to amend § 135.227 to allow helicopters to fly in icing conditions when the aircraft has been type certificated and appropriately equipped for operations in icing conditions. In this regard, it should be noted that at least one helicopter is now so certificated. Thus, it is appropriate to amend the operating rule to allow the use of such helicopters in icing conditions. Section 135.227 has been amended accordingly.

Ref: Proposal 564; Committee III.

Section 135.429 Required inspection personnel.

One commenter objects to proposed § 135.429(d), arguing that a person whose competency as a mechanic has not been certified should not be performing maintenance on or inspecting an air carrier aircraft. The commenter does not agree with the argument that remote area operations require unique and innovative accommodations to allow a pilot to perform such inspections on helicopters.

The FAA disagrees. The pilot training under the regulations for utilization of this section requires the same level of competency as an inspector at the home base to ensure safety in all circumstances, particularly in the unique situations that may arise at "remote" localities. In addition, the remaining requirements of this section ensure that the procedures developed for this situation are tightly controlled. Another commenter suggests that "remote areas" be further defined. This issue has been discussed in conjunction with the proposal affecting § 43.3. Section 135.429(d) is adopted as proposed.

Ref: Proposal 568; Committee III.

Economic Summary

The revised rules are expected to have immediate economic impact. All costs and savings data have been inflated¹ to 1985 dollars from the original 1982 dollars data appearing in the regulatory analysis for the NPRM. These data were derived by the FAA from estimates of industry conditions in late 1981 obtained by research on representative operator groups (operating under Parts 91, 133, 135, 137 and 141), which comprise the rotorcraft industry. A 5 percent profit margin factor was used to derive increased profits and lost profits from revenue increases or decreases, respectively. Cost savings are presumed to increase profits by an equal amount.

¹ The Department of Commerce's December 1985 implicit price deflator for the period 1982-1985 was used to inflate the costs and savings data for this analysis.

The 43 regulatory changes in Notice No. 85-8, which were determined to have a negligible or no technical impact, and consequently a negligible or no economic impact, are listed in Table 2, "Rotorcraft Regulatory Review Program Notice No. 85-8 Rule Changes Having Negligible Or No Economic Impact." Many of these changes are either editorial or clarifying in nature. In addition, some changes incorporate into regulations what has become the current practice of the FAA or industry. The assessment of their economic impacts is based on current industry practice, agency experience, and the explanations given under each rule change in the preamble for this rule. No estimates of specific costs or savings are made for these groups of proposals, and the proposed changes are not further discussed in the economic evaluation except where referenced in the table to

Appendix A. Additional discussion to that given in the preamble for those eight referenced changes is given in Appendix A of the Regulatory Evaluation.

The remaining operation and maintenance changes in Notice No. 85-8 are determined to have an impact, but the impact is not considered to be major under the procedures and criteria prescribed by Executive Order 12291 or significant under the Department of Transportation Regulatory Policies and Procedures (46 FR 11034, February 26, 1979), and the changes will not have a significant economic impact on a substantial number of small entities. A discussion of and tables for the benefits and costs (savings) of the eight changes shown in Table 1 and a regulatory flexibility determination for the impacts on small business entities for each of the four changes having an adverse economic impact are presented below.

TABLE 1.—COST AND SAVINGS OF NOTICE NO. 85-8 RULE CHANGES HAVING AN ECONOMIC IMPACT

FAR section and rule changes	Industry cost (savings)	Principal reason(s)
Part 43: Appendix A: Major alterations, major repairs and preventive maintenance.	(\$461,000 recurring annual cost decrease) (\$25,000 annual profit increase).	Reduced expense to transport and use mechanics in remote areas; reduced rotorcraft downtime.
91.23: Fuel requirements for IFR flight.	(\$542,000 recurring annual cost decrease)	Reduced operational costs from carrying less fuel.
133.021: Pilots	(\$537,000 recurring annual cost decrease)	Reduced cost from not having to transport chief pilot to field locations.
133.41: Flight characteristics requirements	(\$380,000 recurring annual cost decrease) (\$2,100 annual profit increase).	Reduced number of operational flight checks.
133.51: Airworthiness certification	(\$316,000 annual cost decrease) (\$10,000 annual profit increase).	Reduced paperwork and administrative costs.
135.159: Equipment requirements	\$881,000 one-time cost increase, \$70,000 recurring annual cost, \$3,400 one-time lost profit, \$18,000 annual lost profit.	Purchase and installation of Attitude and Heading indicators for rotorcraft now operated under Exemption 2695B; Maintenance cost for instruments; one-time loss for downtime associated with installation; annual loss for some operators stopping night flight instead of purchasing instruments.
135.173: Airborne thunderstorm detection equipment requirements	\$153,000 one-time cost increase; \$16,000 recurring annual cost ² .	Purchase, installation and maintenance of minimum thunderstorm detection (TDX) equipment. It is equipment meeting intent and requirement of rule change for rotorcraft now operating under Exemption 2695B.
135.429: Required inspection personnel	\$117,000 one-time cost ² (\$291,000 recurring annual cost decrease) or (\$262,000 net annualized cost decrease—14 years, 10 pct capital recovery).	Relieved work requirements for work done at remote areas or sites. One-time cost for some operators to install more extensive system of maintenance.

¹ This estimate can vary from no cost to industry estimate shown. The decision to install TDX equipment or to cease flying depends on the prevailing thunderstorm weather occurrence in the area of normal operations and the flexibility an operator has to delay revenue flights until weather improves and to reschedule time into other time periods.

² The one-time cost accrues to a limited number of operators currently utilizing Exemption 2695B, which permits maintenance under §135.411(a)(1) instead of §135.411(a)(2). If only the exemption itself were removed, industry may have recurring cost increases. However, the change provides the primary benefit of the exemption to §135.411(a)(2), and almost all of the expected recurring costs for them would not be incurred.

TABLE 2.—ROTORCRAFT REGULATORY REVIEW PROGRAM

[Notice No. 85-8 Rule changes having negligible or no economic impact]

FAR Section	Economic impact
FAR Part 1: 1.1	No impact—definition.
FAR Part 43:	
43.3	Impact considered with Part 43 Appendix A.
43.15	Negligible costs.
FAR Part 45:	
45.14	Negligible costs (Also see Appendix A in this evaluation).
FAR Part 61:	
61.55	Negligible costs (Also see Appendix A in this evaluation).
61.57	No impact—clarification.
61.63	Negligible costs.
61.105	Negligible costs.
61.107	Negligible costs.
61.113	Negligible costs (Also see Appendix A in this evaluation).
61.125	Negligible costs.
61.127	No impact.
61.131	Negligible costs (Also see Appendix A in this evaluation).

TABLE 2.—ROTORCRAFT REGULATORY REVIEW PROGRAM—Continued

[Notice No. 85-8 Rule changes having negligible or no economic impact]

FAR Section	Economic impact
61.159	Negligible costs.
61.161	Negligible savings.
61.163	Negligible costs (Also see Appendix A in this evaluation).
61.165	No impact.
Appendix A:	No impact—clarification.
Appendix B:	Negligible costs (Also see Appendix A in this evaluation).
FAR Part 91:	
91.2	No impact.
91.116	Negligible savings.
91.171	Negligible costs.
FAR Part 133:	
133.1	Negligible savings.
133.11	No impact—clarification.
133.13	No impact—clarification.
133.23	Negligible savings.
133.25	No impact—clarification (see 133.51).
133.27	No impact—clarification (see 133.25).
133.31	No impact—clarification.

TABLE 2.—ROTORCRAFT REGULATORY REVIEW PROGRAM—Continued

[Notice No. 85-8 Rule changes having negligible or no economic impact]

FAR Section	Economic impact
133.33	No impact—clarification.
133.35	Negligible savings.
133.37	No impact—optional standard—see 133.1 (Also see Appendix A in this evaluation).
133.39	No impact.
133.45	Negligible savings.
133.47	No impact—clarification (see 133.45).
FAR Part 135:	
135.1	Negligible savings.
135.23	No impact—clarification.
135.39	Negligible savings.
135.117	Negligible savings.
135.167	Negligible costs (Also see Appendix A in this evaluation).
135.181	Negligible savings.
135.223	Negligible savings.
135.227	No impact—clarification.

Benefits and Costs (Savings)

In addition to editorial changes to and clarification of the present regulations, benefits are likely to accrue from other changes in this notice. Five changes (Part 43, Appendix A; §§ 91.167, 133.21, 133.41, and 133.51) will provide operational and maintenance cost savings to Parts 91, 133, and/or 135 operators. Three changes will cause incurring of new costs. One of these, § 135.429, has an initial one-time cost but will provide a net annual cost decrease through relieved inspection work requirements. The other two, §§ 135.159 and 135.173, increase passenger safety. The costs of these will impact Part 135 operators currently provided relief from the present regulations by using Exemption 2695B.

For a complete discussion of the above, see the copy of the economic evaluation in the Docket, or request a copy from the individual listed under "FOR FURTHER INFORMATION CONTACT."

International Trade Impact Analysis

With the exception of three negligible cost changes that affect both airplanes and rotorcraft, this rulemaking action implements changes to the regulations governing only the operation and maintenance of rotorcraft in the United States. It should not impact U.S. services in foreign countries nor have a significant impact on foreign services in the United States. In regard to foreign services, for one example, persons authorized to conduct operations in the United States as a foreign air carrier are issued operations specifications in accordance with the requirements of Part 129 of the Federal Aviation Regulations. Therefore, the FAA cannot discern what impact, if any, this regulation would have on international trade.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure, among other things, that small entities are not unduly affected by Government regulations.

The RFA requires agencies to prepare regulatory flexibility analyses of rules that may have a "significant economic impact on a substantial number of small entities." Thus, the first step in conducting a regulatory flexibility analysis is to determine whether any rule change has a significant economic impact on a substantial number of small entities. The number of businesses and all other estimates used in the following determination have been derived from information and data obtained through

industry research on representative rotorcraft operators.

Three changes—§ 135.159, Equipment requirements; § 135.173, Airborne thunderstorm detection equipment; and § 135.429, Required inspection personnel—impose an additional cost on some Part 135 operators. The cost imposed by the three changes is due to the planned expiration of FAA Exemption 2695F and the impact of its removal on those operators now holding the exemption. By examining the exemption holding status of the rotorcraft operators now eligible for relief from the particular rule requirement, two tests can be used to determine whether or not a substantial number of them are significantly impacted.

The RFA requirements are triggered if 34 percent of the operators using the exemption to meet the requirements of § 135.159 (96 operators out of an estimated 286 who conduct night operations) incur an annualized cost increase greater than \$3,300. As further explained below, the analysis indicates that these conditions are not met for any of these changes.

Section 135.173 Airborne thunderstorm detection equipment requirements.

Although the rule change will be relieving because the requirement for thunderstorm detection equipment for VFR operations has been modified to allow helicopter flight without the equipment under certain conditions, one group of small rotorcraft operators will be adversely affected. These are the operators who use Exemption No. 2695F, which permits the operation of rotorcraft of ten passenger seats or more under VFR (day or night) without thunderstorm detection equipment.

An estimated 41 small operators own or operate rotorcraft with 10 or more passenger seats. An estimated 9 of these 41 use the exemption and are directly affected, but only 6 will incur an annualized economic impact greater than \$3,300 when the exemption is removed.² Because these six comprise only 15 percent of the affected population, a regulatory flexibility analysis of the exemption from the requirements of § 135.173 is not required.

² The analysis was measured with information obtained from industry research made for a stricter rule proposal removing the exemption for this FAR, and the estimate is therefore conservative; that is, the magnitude of impact for each operator is expected to be less.

Section 135.429 Required inspection personnel.

Currently, a limited number of small operators of rotorcraft with passenger seating configurations of 10 seats or more use the exemption, which permits such operators to utilize the maintenance requirements of § 135.411(a)(1) for 9 passenger seats or less instead of § 135.411(a)(2) for their rotorcraft. When the exemption is removed, these operators may incur costs to install a more extensive system of maintenance for 10 plus passenger rotorcraft, but the change to § 135.429 will also retain most of the annual benefits that these operators achieved under the exemption to § 135.411(a)(2).

An estimated 41 small operators own or operate rotorcraft with 10 passenger seats or more. Six of these use the exemption and will be directly affected when the exemption is removed. Even if all six incurred an annualized economic impact greater than \$3,300, these six would comprise only 15 percent of the affected population. Therefore, a regulatory flexibility analysis for removal of the exemption from the requirements of § 135.411(a)(2) is not required.

Section 135.159 Equipment requirements: Carrying passengers under VFR at night or under VFR over-the-top conditions.

This rule requires that, for § 135.159, FAA Exemption No. 2695B be rescinded. The exemption permits the operation of rotorcraft with a maximum certificated takeoff weight of 6,000 pounds or less at night under VFR without the following instruments:

- (a) Slip skid indicator;
- (b) Gyroscopic bank and pitch (attitude) indicator; and
- (c) Gyroscopic direction (heading) indicator.

An estimated 254 small operators conduct night operations and have one or more of the subject size aircraft in their fleet. Of these 254 operators, an estimated 104 would be directly affected by removal of the exemption. However, further industry research indicates that of the 120 operators who use the exemption, only 59 will experience an annualized cost greater than \$3,300 when the exemption is removed. Because these 59 operators comprise only 23 percent of the 254 operators who are subject to the proposed regulation (they fly at night), a regulatory flexibility analysis is not required for removal of Exemption No. 2695F from the requirements of § 135.159.

In addition to the above economic impacts, the final rule is expected to have beneficial effects on many small businesses. These also are discussed in detail in the Regulatory Flexibility Analysis contained in Appendix B of the Regulatory Evaluation which has been placed in the docket. A summary of these beneficial effects follows.

Section 133.21 Personnel.

The objective of these rules is to eliminate external-load accidents due to inadequate pilot competence in performing particular operations. Two methods of ensuring such pilot competence (which can be combined) are to require experience, such as through a "trainee" pilot working a certain amount of time with a "qualified" pilot, and through pilot testing by a qualified examiner. The proposal would permit pilot testing to be carried out by FAA employees, designated examiners, or individuals within the particular company performing the external-load operation. Present regulations provide for such testing only by the Chief Pilot.

An estimated 179 external-load operators are potentially affected by this rule. Almost all may be assumed to be small. Benefits may be considered roughly proportional to fleet size, although variations may be expected due to operating territory and other factors. Therefore, to the extent that small operators have smaller fleets than large ones, the \$481,000 projected annual cost savings may be expected to average no more than \$2,687 per affected operator.

Industry research indicates that over 40 percent of Part 133 certificate holders also hold Part 135 certificates. The total fleet size distribution of Part 133 operators is unknown. Regardless of whether or not it resembles the distribution of the Part 135 fleet. The relatively high maximum average impact suggests that the threshold of economic impact significance could very well be exceeded by one-third of the potentially affected small operators.

Section 133.41 Flight characteristics requirements.

The objective of these rules is to reduce accidents resulting from the use of particular combinations of rotorcraft models with certain external loads and external-load attaching devices. Many such combinations of rotorcraft models, external loads, and external-load attaching devices pose a significant risk of accident even when under the control of a competent pilot. The FAA concludes that confidence in the external-load operation can only be

maintained when each possible rotorcraft-load combination is successfully demonstrated at least once.

An estimated 164 external-load rotorcraft operators are potentially affected by this rule. Almost all may be considered small. Benefits may be considered roughly proportional to fleet size, although variations may be expected due to fleet diversity and other factors. Therefore, to the extent that small operators have smaller fleets than large ones, the \$340,000 projected annual cost savings and \$2,000 annual profit increase for all affected carriers combined may be expected to be no greater than \$2,085 per potentially affected small operator, on average.

As stated previously, industry research indicates that somewhat over 40 percent of Part 133 certificate holders also hold Part 135 certificates. The size of the average impact, however, suggests that the threshold of economic impact significance could well be exceeded by one-third of the potentially affected small operators. Section 133.41 is closer to the borderline in this regard than § 133.21.

Cumulative Economic Impact

The changes to Part 43, Appendix A, and §§ 91.23, 133.21, 133.41, 133.51, 135.169, 135.173, and 135.429 refer to different, but partially overlapping, categories of operators. The following eight changes are considered to have overlapping impacts:

- (1) Part 43, Appendix A—Part 135 operators serving remote areas.
- (2) Section 91.23—Part 91 operators (not holding Part 135 certificates) flying to some extent under IFR.
- (3) Section 133.21—Part 133 operators in general.
- (4) Section 133.41—Part 133 operators in general.
- (5) Section 133.51—Part 133 operators in general.
- (6) Section 135.159—Part 135 operators flying to some extent VFR at night.
- (7) Section 135.173—Part 135 operators using rotorcraft with 10 seats or more.
- (8) Section 135.429—Part 135 operators using rotorcraft with 10 seats or more.

Although the first and second categories are, by definition, separate from each other, there exists no operator survey data that would allow the determination or reliable estimation of the actual extent to which each of the other categories overlaps. It is possible to estimate, however, whether or not it is likely that the number of operators experiencing a significant cumulative net economic impact (beneficial or detrimental) from all eight of these rules would constitute one-third or more of the total of individual potentially

affected operators, given the (separate) distributions of fleet size for Part 135 and non-Part 135 operators. The determination can be made by assuming operator impact is proportional to operator fleet size.

The total of individual operators potentially affected by any of the rules may be estimated as follows:

Part 135 operators, including all in proposal categories (1), (6), (7), and (8), and 42 percent of those in categories (3), (4), and (5). Note.—It is estimated that 42.4 percent of Part 133 operators also hold Part 135 certificates.....	358
Non-Part 135 certificate holders, including 57.6 percent of those in proposal categories (3), (4), and (5).....	393
Total.....	751

This estimate maximizes the extent of "overlapping" among relevant categories and increases the chance of one-third or more of the total individual operators' experiencing a significant cumulative net impact. This is the case because some of the overlapping considered above is not necessarily the most likely representation of actual practice. For example, Part 91 operators that fly under IFR may well not also engage in Part 133 operations, which are generally carried out under VFR. Even with maximum overlapping of potentially affected small operator categories and given the relatively large number of non-Part 135, and even Part 135, operators that have single-craft or very small fleets, an estimated 217 out of 751 would be expected to bear a significant cumulative impact from the eight rules. The remaining 534 would not be significantly impacted. The number of small operators expected to be impacted would be less than one-third of the total of such operators unless at least 120 of those operators were eliminated by being designated "large" operators. Therefore, it is reasonable to expect that the cumulative net economic impact (beneficial or detrimental) of these rules would not reach significant levels for one-third or more potentially affected small operators.

The determination is sensitive to assumptions made concerning: (1) The number of proposal category (2) operators eliminated as "large" entities, and (3) the fleet size of "small" operators."

Conclusion

A final regulatory flexibility analysis is not required for the revisions being made to §§ 135.159, 135.173, and 135.429. For each of the revisions, the annualized

cost is not greater than \$3,300 for more than one-third of the operators who would be affected by the revised regulation. In view of the above, the regulatory changes herein will not have a significant economic impact on a substantial number of small entities.

Reporting and Recordkeeping Requirements

The reporting and recordkeeping requirements contained in this amendment have previously been approved by the Office of Management and Budget and have been assigned Control No. 2120-0044.

Conclusion

This rule upgrades rotorcraft certification and operational requirements and allows operators to utilize rotorcraft more fully. Therefore, the FAA has determined that this rule is not major under Executive Order 12291 or significant under Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). Based on the Regulatory Flexibility determinations discussed in this document, I certify that this rule will not have a significant economic impact on a substantial number of small entities. The regulatory evaluation of this rule is contained in the docket. A copy may be obtained by contacting the person identified under "FOR FURTHER INFORMATION CONTACT."

List of Subjects

14 CFR Part 1

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

14 CFR Part 43

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

14 CFR Part 45

Air safety, Safety, Aviation safety, Air transportation, Transportation, Helicopters, Rotorcraft.

14 CFR Part 61

Airmen, Aircraft pilots, Pilots, Transportation, Air safety, Safety, Aviation safety, Air transportation, Aircraft, Helicopters, Rotorcraft.

14 CFR Part 91

Air carriers, Aviation safety, Safety, Aircraft, Aircraft pilots, Pilots, Air transportation, Cargo.

14 CFR Part 133

Aircraft, Airworthiness, Pilots.

14 CFR Part 135

Air carriers, Aviation safety, Safety, Air transportation, Air taxi, Airworthiness, Cargo, Pilots, Airmen, Aircraft, Transportation, Helicopters.

Adoption of the Amendment

In consideration of the foregoing, Parts 1, 43, 45, 61, 91, 133, and 135 of the Federal Aviation Regulations (14 CFR Parts 1, 43, 45, 61, 91, 133, and 135) are amended as follows:

PART 1—DEFINITIONS AND ABBREVIATIONS

1. The authority citation for Part 1 is revised to read as set forth below, and the authority citations following each of the sections of Part 1 are removed:

Authority: 49 U.S.C. 1347, 1348, 1354(a), 1357(d)(2), 1372, 1421 through 1430, 1432, 1442, 1443, 1472, 1510, 1522, 1652(e), 1655(c), 1657(f), 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983).

2. By amending § 1.1 by revising the introductory paragraph of the definition of "Rotorcraft-load combination" and by adding a new paragraph (4) to read as follows:

§ 1.1 General definitions.

"Rotorcraft-load combination" means the combination of a rotorcraft and an external-load, including the external-load attaching means. Rotorcraft-load combinations are designated as Class A, Class B, Class C, and Class D, as follows:

(4) "Class D rotorcraft-load combination" means one in which the external-load is other than a Class A, B, or C and has been specifically approved by the Administrator for that operation.

PART 43—MAINTENANCE, PREVENTIVE MAINTENANCE, REBUILDING, AND ALTERATION

3. The authority citation for Part 43 is revised to read as set forth below, and the authority citations following each of the sections of Part 43 are removed:

Authority: 49 U.S.C. 1354, 1421 through 1430; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983).

4. By amending § 43.3 by redesignating paragraph (h) as paragraph (i) and by adding a new paragraph (h) to read as follows:

§ 43.3 Persons authorized to perform maintenance, preventive maintenance, rebuilding, and alterations.

(h) Notwithstanding the provisions of paragraph (g) of this section, the Administrator may approve a certificate holder under Part 135 of this chapter, operating rotorcraft in a remote area, to allow a pilot to perform specific preventive maintenance items provided—

(1) The items of preventive maintenance are a result of a known or suspected mechanical difficulty or malfunction that occurred en route to or in a remote area;

(2) The pilot has satisfactorily completed an approved training program and is authorized in writing by the certificate holder for each item of preventive maintenance that the pilot is authorized to perform;

(3) There is no certificated mechanic available to perform preventive maintenance;

(4) The certificate holder has procedures to evaluate the accomplishment of a preventive maintenance item that requires a decision concerning the airworthiness of the rotorcraft; and

(5) The items of preventive maintenance authorized by this section are those listed in paragraph (c) of Appendix A of this part.

5. By amending § 43.15 by revising the introductory text of paragraph (c)(2) and by adding a new paragraph (c)(3) to read as follows:

§ 43.15 Additional performance rules for inspections.

(2) Each person approving a reciprocating-engine-powered aircraft for return to service after an annual or 100-hour inspection shall, before that approval, run the aircraft engine or engines to determine satisfactory performance in accordance with the manufacturer's recommendations of—

(3) Each person approving a turbine-engine-powered aircraft for return to service after an annual, 100-hour, or progressive inspection shall, before that approval, run the aircraft engine or engines to determine satisfactory performance in accordance with the manufacturer's recommendations.

6. By amending Part 43, Appendix A, by revising paragraph (c)(23) and by adding new paragraph (c)(30) to read as follows:

Appendix A—Major Alterations, Major Repairs, and Preventive Maintenance

(c) * * *

(23) Cleaning or replacing fuel and oil strainers or filter elements.

(30) Removing, checking, and replacing magnetic chip detectors.

PART 45—IDENTIFICATION AND REGISTRATION MARKING

7. The authority citation for Part 45 is revised to read as set forth below, and the authority citations following each of the sections of Part 45 are removed:

Authority: 49 U.S.C. 1348, 1354, 1401, 1402, 1421, 1423, 1522, 1655(c); (Revised Pub. L. 97-449, January 12, 1983).

8. By revising § 45.14 to read as follows:

§ 45.14 Identification of critical components.

Each person who produces a part for which a replacement time, inspection interval, or related procedure is specified in the Airworthiness Limitations section of a manufacturer's maintenance manual or Instructions for Continued Airworthiness shall permanently and legibly mark that component with a part number (or equivalent) and a serial number (or equivalent).

PART 61—CERTIFICATION: PILOTS AND FLIGHT INSTRUCTORS

9. The authority citation for Part 61 is revised to read as set forth below, and the authority citations following each of the sections of Part 61 are removed:

Authority: 49 U.S.C. 1354(a), 1355, 1421, 1422, and 1427; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983).

§ 61.3 [Amended]

10. By revising § 61.3 by amending paragraph (f)(2) by removing the phrase "airline transport pilot certificate (airplane)" and replacing it with the phrase "appropriate airline transport pilot certificate"; by amending the flush paragraph after (f)(2) by removing the phrase "Part 121" and replacing it with the phrase "Parts 121 and 135"; and by amending paragraph (g) by removing the word "airplane" wherever it appears and replacing it with the word "aircraft".

§ 61.21 [Amended]

11. By amending § 61.21 by removing the word "airplane" and inserting the word "aircraft" in its place each time it appears in the section.

12. By amending § 61.55 by revising the section title, the introductory text of paragraphs (a) and (b), and paragraphs (b)(1), (b)(2)(i) and (ii), and (d)(1) through (d)(3) to read as follows:

§ 61.55 Second-in-command qualifications.

(a) Except as provided in paragraph (d) of this section, no person may serve as second in command of an aircraft type certificated for more than one required pilot flight crewmember unless that person holds—

(b) Except as provided in paragraph (d) of this section, no person may serve as second in command of an aircraft type certificated for more than one required pilot flight crewmember unless, since the beginning of the 12th calendar month before the month in which the pilot serves, the pilot has, with respect to that type of aircraft—

(1) Become familiar with all information concerning the aircraft's powerplant, major components and systems, major appliances, performance and limitations, standard and emergency operating procedures, and the contents of the approved aircraft flight manual or approved flight manual material, placards, and markings.

(2) * * *

(i) Three takeoffs and three landings to a full stop in the aircraft as the sole manipulator of the flight controls; and

(ii) Engine-out procedures and maneuvering with an engine out while executing the duties of a pilot in command. For airplanes, this requirement may be satisfied in a simulator acceptable to the Administrator.

(d) * * *

(1) Meets the pilot in command proficiency check requirements of Part 121, 125, 127, or 135 of this chapter;

(2) Is designated as the second in command of an aircraft operated under the provisions of Part 121, 125, 127, or 135 of this chapter; or

(3) Is designated as the second in command of an aircraft for the purpose of receiving flight training required by this section and no passengers or cargo are carried on that aircraft.

13. By amending § 61.57 by adding the word "calendar" before the word "months" in the flush paragraph following paragraph (a)(2) and in paragraphs (e)(1) and (e)(2) and by revising the introductory text of paragraph (a) to read as follows:

§ 61.57 Recent flight experience: Pilot in command.

(a) *Flight review.* No person may act as pilot in command of an aircraft unless, within the preceding 24 calendar months, that person has—

§ 61.67 [Amended]

14. By amending § 61.67 by removing the word "airplane" and inserting the word "aircraft" in its place each time it appears in the section.

15. By amending § 61.87 by redesignating paragraphs (c)(2) (v), (vi), and (vii) as paragraphs (c)(2) (vi), (vii), and (viii), respectively; by revising the heading of (c)(2); by revising (c)(2)(ii); by adding a new paragraph (c)(2)(v); and by revising redesignated paragraph (c)(2)(viii) and paragraph (c)(3) to read as follows:

§ 61.87 Requirements for solo flight.

(c) * * *

(2) *In rotorcraft other than single-place gyroplanes.*

(ii) Ground maneuvering and runups;

(v) Rapid decelerations (helicopters only);

(viii) Simulated emergency procedures, including autorotational descents with a power recovery or running landing in gyroplanes, a power recovery to a hover in single-engine helicopters, or approaches to a hover or landing with one engine inoperative in multiengine helicopters.

(3) *In single-place gyroplanes.*

(i) Flight preparation procedures, including preflight inspection and powerplant operation;

(ii) Ground maneuvering and runups;

(iii) Straight and level flight, turns, climbs, and descents;

(iv) Navigation by ground references, airport traffic patterns, and collision avoidance procedures;

(v) Normal takeoffs and landings;

(vi) Simulated emergency procedures, including autorotational descents with a power recovery or a running landing; and

(vii) At least three successful flights in a gyroplane under the observation of a qualified instructor. Items in paragraphs (c)(3) (iii) and (iv) of this section may be accomplished in a dual-control helicopter or gyroplane. Instruction must be given by a flight instructor who is authorized to give instruction in helicopters or gyroplanes, as appropriate.

16. By amending § 61.105 by revising paragraph (a) to read as follows: by removing paragraph (b); and by redesignating paragraphs (c), (d), and (e) as (b), (c), and (d), respectively.

§ 61.105 Aeronautical knowledge.

(a) *Airplanes and rotorcraft.* (1) The accident reporting requirements of the National Transportation Safety Board and the Federal Aviation Regulations applicable to private pilot privileges, limitations, and flight operations for airplanes or rotorcraft, as appropriate; the use of the "Airman's Information Manual," and FAA advisory circulars;

(2) VFR navigation using pilotage, dead reckoning, and radio aids;

(3) The recognition of critical weather situations from the ground and in flight, the procurement and use of aeronautical weather reports and forecasts;

(4) The safe and efficient operation of airplanes or rotorcraft, as appropriate, including high-density airport operations, collision avoidance precautions, and radio communication procedures; and

(5) Basic aerodynamics and the principles of flight which apply to airplanes or rotorcraft, as appropriate.

17. By amending § 61.107 by revising paragraphs (b)(4), (5) and (6) and by adding new paragraph (b)(7) to read as follows:

§ 61.107 Flight proficiency.

(b) ***

(4) Cross-country flying, using pilotage, dead reckoning, and radio aids, including one 1-hour flight;

(5) Operations in confined areas and on pinnacles, rapid decelerations, landings on slopes, high-altitude takeoffs, and run-on landings;

(6) Night flying, including takeoffs, landings, and VFR navigation; and

(7) Simulated emergency procedures, including aircraft and equipment malfunctions, approaches to a hover or landing with an engine inoperative in a multiengine helicopter, or autorotational descents with a power recovery to a hover in single-engine helicopters.

18. By revising § 61.113 to read as follows:

§ 61.113 Rotorcraft rating: Aeronautical experience.

An applicant for a private pilot certificate with a rotorcraft category rating must have at least the following aeronautical experience:

(a) *For a helicopter class rating,* 40 hours of flight instruction and solo flight time in aircraft, including at least—

(1) 20 hours of flight instruction from an authorized flight instructor, 15 hours of which must be in a helicopter, including—

(i) 3 hours of cross-country flying in helicopters;

(ii) 3 hours of night flying in helicopters, including 10 takeoffs and landings, each of which must be separated by an en route phase of flight;

(iii) 3 hours in helicopters in preparation for the private pilot flight test within 60 days before that test; and

(iv) A flight in a helicopter with a landing at a point other than an airport; and

(2) 20 hours of solo flight time, 15 hours of which must be in a helicopter, including at least—

(i) 3 hours of cross-country flying in helicopters, including one flight with a landing at three or more points, each of which must be more than 25 nautical miles from each of the other two points; and

(ii) Three takeoffs and landings in helicopters at an airport with an operating control tower, each of which must be separated by an en route phase of flight.

(b) *For a gyroplane class rating,* 40 hours of flight instruction and solo flight time in aircraft, including at least—

(1) 20 hours of flight instruction from an authorized flight instructor, 15 hours of which must be in a gyroplane, including—

(i) 3 hours of cross-country flying in gyroplanes;

(ii) 3 hours of night flying in gyroplanes, including 10 takeoffs and landings; and

(iii) 3 hours in gyroplanes in preparation for the private pilot flight test within 60 days before that test; and

(2) 20 hours of solo flight time, 10 hours of which must be in a gyroplane, including—

(i) 3 hours of cross-country flying in gyroplanes, including one flight with a landing at three or more points, each of which must be more than 25 nautical miles from each of the other two points; and

(ii) Three takeoffs and landings in gyroplanes at an airport with an operating control tower.

(c) An applicant who does not meet the night flying requirement in paragraphs (a)(1)(ii) or (b)(1)(ii) of this section is issued a private pilot certificate bearing the limitation "night flying prohibited." This limitation may be removed if the holder of the certificate demonstrates compliance with the requirements of paragraphs (a)(1)(ii) or (b)(1)(ii) of this section, as appropriate.

19. By amending § 61.125(b) by removing the word "and" in paragraph (b)(3); by removing the period at the end of paragraph (b)(4) and inserting "; and"

in its place; and by adding a new paragraph (b)(5) to read as follows:

§ 61.125 Aeronautical knowledge.

(b) ***

(5) Basic aerodynamics and principles of flight which apply to rotorcraft and the significance and use of performance charts.

20. By amending § 61.127 by removing the word "and" at the end of paragraph (b)(7); by revising paragraphs (b)(5) and (8); and by adding a new paragraph (b)(9) to read as follows:

§ 61.127 Flight proficiency.

(b) ***

(5) Recognition of and recovery from imminent flight at critical/rapid descent with power (settling with power);

(8) Operations in confined areas and on pinnacles, rapid decelerations, landing on slopes, high-altitude takeoffs, and run-on landings; and

(9) Simulated emergency procedures, including failure of an engine or other component or system, and approaches to a hover or landing with one engine inoperative in multiengine helicopters, or autorotational descents with a power recovery to a hover in single-engine helicopters.

21. By revising § 61.131 to read as follows:

§ 61.131 Rotorcraft ratings: Aeronautical experience.

An applicant for a commercial pilot certificate with a rotorcraft category rating must have at least the following aeronautical experience as a pilot:

(a) *For a helicopter class rating,* 150 hours of flight time, including at least 100 hours in powered aircraft, 50 hours of which must be in a helicopter, including at least—

(1) 40 hours of flight instruction from an authorized flight instructor, 15 hours of which must be in a helicopter, including—

(i) 3 hours of cross-country flying in helicopters;

(ii) 3 hours of night flying in helicopters, including 10 takeoffs and landings, each of which must be separated by an en route phase of flight;

(iii) 3 hours in helicopters preparing for the commercial pilot flight test within 60 days before that test; and

(iv) Takeoffs and landings at three points other than airports; and

(2) 100 hours of pilot-in-command flight time, 35 hours of which must be in a helicopter, including at least—

(i) 10 hours of cross-country flying in helicopters, including one flight with a landing at three or more points, each of which must be more than 50 nautical miles from each of the other two points; and

(ii) Three takeoffs and landings in helicopters, each of which must be separated by an en route phase of flight, at an airport with an operating control tower.

(b) *For a gyroplane class rating*, 150 hours of flight time in aircraft, including at least 100 hours in powered aircraft, 25 hours of which must be in a gyroplane, including at least—

(1) 40 hours of flight instruction from an authorized flight instructor, 10 hours of which must be in a gyroplane, including at least—

(i) 3 hours of cross-country flying in gyroplanes;

(ii) 3 hours of night flying in gyroplanes, including 10 takeoffs and landings; and

(iii) 3 hours in gyroplanes preparing for the commercial pilot flight test within 60 days before that test; and

(2) 100 hours of pilot-in-command flight time, 15 hours of which must be in a gyroplane, including at least—

(i) 10 hours of cross-country flying in gyroplanes, including one flight with a landing at three or more points, each of which is more than 50 nautical miles from each of the other two points; and

(ii) Three takeoffs and landings in gyroplanes at an airport with an operating control tower.

22. By revising § 61.159 to read as follows:

§ 61.159 Rotorcraft rating: Aeronautical knowledge.

An applicant for an airline transport pilot certificate with a rotorcraft category and a helicopter class rating must pass a written test on—

(a) So much of this chapter as relates to air carrier rotorcraft operations;

(b) Rotorcraft design, components, systems, and performance limitations;

(c) Basic principles of loading and weight distribution and their effect on rotorcraft flight characteristics;

(d) Air traffic control systems and procedures relating to rotorcraft;

(e) Procedures for operating rotorcraft in potentially hazardous meteorological conditions;

(f) Flight theory as applicable to rotorcraft; and

(g) The items listed under paragraphs (b) through (m) of § 61.153.

23. By revising § 61.161 to read as follows:

§ 61.161 Rotorcraft rating: Aeronautical experience.

(a) An applicant for an airline transport pilot certificate with a rotorcraft category and helicopter class rating must hold a commercial pilot certificate, or a foreign airline transport pilot or commercial pilot certificate with a rotorcraft category and helicopter class rating issued by a member of ICAO, or be a pilot in an armed force of the United States whose military experience qualifies that pilot for the issuance of a commercial pilot certificate under § 61.73.

(b) An applicant must have had at least 1,200 hours of flight time as a pilot, including at least—

(1) 500 hours of cross-country flight time;

(2) 100 hours of night flight time, of which at least 15 hours are in helicopters;

(3) 200 hours in helicopters, including at least 75 hours as pilot in command, or as second in command performing the duties and functions of a pilot in command under the supervision of a pilot in command, or any combination thereof; and

(4) 75 hours of instrument time under actual or simulated instrument conditions of which at least 50 hours were completed in flight with at least 25 hours in helicopters as pilot in command, or as second in command performing the duties of a pilot in command under the supervision of a pilot in command, or any combination thereof.

24. By revising § 61.163 to read as follows:

§ 61.163 Rotorcraft rating: Aeronautical skill.

(a) An applicant for an airline transport pilot certificate with a rotorcraft category and helicopter class rating, or additional aircraft rating, must pass a practical test on those maneuvers set forth in Appendix B of this part in a helicopter. The FAA inspector or designated examiner may modify or waive any maneuver where necessary for the reasonable and safe operation of the rotorcraft being used and may combine any maneuvers and permit their performance in any convenient sequence to determine the applicant's competency.

(b) Whenever an applicant for an airline transport pilot certificate with a rotorcraft category and helicopter class rating does not already have an instrument rating, the applicant shall, as part of the practical test, comply with § 61.65(g).

25. By amending § 61.165 by removing paragraph (b); by redesignating

paragraph (c) as (b); and by revising the introductory text of both paragraphs (a) and redesignated (b) to read as follows:

§ 61.165 Additional category ratings.

(a) *Rotorcraft category with a helicopter class rating.* The holder of an airline transport pilot certificate (airplane category) who applies for a rotorcraft category with a helicopter class rating must meet the applicable requirements of §§ 61.159, 61.161, and 61.163 and—

(b) *Airplane rating.* The holder of an airline transport pilot certificate (rotorcraft category) who applies for an airplane category must comply with §§ 61.153, 61.155 (except § 61.155(b)(1)), and 61.157 and—

26. By amending Part 61 by revising the title of Appendix A to read as follows:

Appendix A—Practical Test Requirements for Airplane Airline Transport Pilot Certificates and Associated Class and Type Ratings

27. By amending Part 61 by adding a new Appendix B to read as follows:

Appendix B—Practical Test Requirements for Rotorcraft Airline Transport Pilot Certificates with a Helicopter Class Rating and Associated Type Ratings

Throughout the maneuvers prescribed in this appendix, good judgment commensurate with a high level of safety must be demonstrated. In determining whether such judgment has been shown, the FAA inspector or designated pilot examiner who conducts the check considers adherence to approved procedures, actions based on analysis of situations for which there is no prescribed procedure or recommended practice, and qualities of prudence and care in selecting a course of action. The successful outcome of a procedure or maneuver will never be in doubt.

Maneuvers/Procedures

The maneuvers and procedures in this appendix must be performed in a manner that satisfactorily demonstrates knowledge and skill with respect to—

(1) The helicopter, its systems, and components;

(2) Proper control of airspeed, direction, altitude, and attitude in accordance with procedures and limitations contained in the approved Rotorcraft Flight Manual, checklists, or other approved material appropriate to the rotorcraft type; and

(3) Compliance with approved en route, instrument approach, missed approach, ATC, and other applicable procedures.

I. Preflight

(a) *Equipment examination (oral)*: The equipment examination must be repeated if the flight maneuvers portion is not satisfactorily completed within 60 days. The equipment examination must cover—

(1) Subjects requiring a practical knowledge of the helicopter, its powerplants, systems, components, and operational and performance factors;

(2) Normal, abnormal, and emergency procedures and related operations and limitations; and

(3) The appropriate provisions of the approved helicopter Flight Manual or manual material.

(b) *Preflight inspection*: The pilot must—

(1) Conduct an actual visual inspection of the exterior and interior of the helicopter, locating each item and explaining briefly the purpose of inspecting it; and

(2) Demonstrate the use of the prestart checklist, appropriate control system checks, starting procedures, radio and electronic equipment checks, and the selection of proper navigation and communications radio facilities and frequencies before flight.

(c) *Taxiing*: The maneuver includes ground taxiing, hover taxiing (including performance checks), and docking procedures, as appropriate, in compliance with instructions issued by ATC, the FAA inspector, or the designated pilot examiner.

(d) *Powerplant checks*: As appropriate to the helicopter type in accordance with the Rotorcraft Flight Manual procedures.

II. Takeoffs

(a) *Normal*: One normal takeoff from a stabilized hover which begins when the helicopter is taxied into position for takeoff.

(b) *Instrument*: One takeoff with instrument conditions simulated at or before reaching 100 feet above airport elevation.

(c) *Crosswind*: One crosswind takeoff from a stabilized hover, if practical under the existing meteorological, airport, and traffic conditions.

(d) *Powerplant failure*: (1) For single-engine rotorcraft, one normal takeoff with simulated powerplant failure.

(2) For multiengine rotorcraft, one normal takeoff with simulated failure of one engine—

(i) At an appropriate airspeed that would allow continued climb performance in forward flight; or

(ii) At an appropriate airspeed that is 50 percent of normal cruise speed, if there is no published single-engine climb airspeed for that type of helicopter.

(e) *Rejected*: One normal takeoff that is rejected after simulated engine failure at a reasonable airspeed, determined by giving due consideration to the helicopter's characteristics, length of landing area, surface conditions, wind direction and velocity, and any other pertinent factors that may adversely affect safety.

III. Instrument Procedures

(a) *Area departure and arrival*: During each of these maneuvers, the applicant must—

(1) Adhere to actual or simulated ATC clearances (including assigned bearings or radials); and

(2) Properly use available navigation facilities.

(b) *Holding*: This maneuver includes entering, maintaining, and leaving holding patterns.

(c) *ILS and other instrument approaches*:

The instrument approach begins when the helicopter is over the initial approach fix for the approach procedure being used (or turned over to the final controller in case of a surveillance or precision radar approach) and ends when the helicopter terminates at a hover or touches down or where transition to a missed approach is completed. The following approaches must be performed:

(1) At least one normal ILS approach.

(2) For multiengine rotorcraft, at least one manually controlled ILS approach with a simulated failure of one powerplant. The simulated engine failure should occur before initiating the final approach course and continue to a hover to touchdown or through the missed approach procedure.

(3) At least one nonprecision approach procedure that is representative of the nonprecision approach procedure that the applicant is likely to use.

(4) At least one nonprecision approach procedure on a letdown aid other than the approach procedure performed under subparagraph (3) of this paragraph that the applicant is likely to use.

(d) *Circling approaches*: At least one circling approach must be made under the following conditions:

(1) The portion of the circling approach to the authorized minimum circling approach altitude must be made under simulated instrument conditions.

(2) The approach must be made to the authorized minimum circling approach altitude followed by a change in heading and the necessary maneuvering (by visual reference) to maintain a flight path that permits a normal landing on a runway at least 90 degrees from the final approach course of the simulated instrument portion of the approach.

(3) The circling approach must be performed without excessive maneuvering and without exceeding the normal operating limits of the rotorcraft. The angle of bank should not exceed 30 degrees.

(e) *Missed approaches*: Each applicant must perform at least two missed approaches with at least one missed approach from an ILS approach. At the discretion of the FAA inspector or designated examiner, a simulated powerplant failure may be required during any of the missed approaches. The maneuvers may be performed either independently or in conjunction with maneuvers required under section III or V of this appendix. At least one must be performed in flight.

IV. In-flight Maneuvers

(a) *Steep turns*: At least one steep turn in each direction must be performed. Each steep turn must involve a bank angle of 30 degrees with a heading change of at least 180 degrees but not more than 360 degrees.

(b) *Settling with power*: Demonstrate recognition of and recovery from imminent flight at critical/rapid descent with power. For the purpose of this maneuver, settling with power is reached when a perceptible buffet or other indications of imminent settling with power have been induced.

(c) *Powerplant failure*: In addition to the specific requirements for maneuvers with simulated powerplant failures, the FAA inspector or designated examiner may require a simulated powerplant failure at any time during the check.

(d) Recovery from unusual attitudes.

V. Approaches and Landings

(a) *Normal*: One normal approach to a stabilized hover or to the ground must be performed.

(b) *Instrument*: One approach to a hover or to a landing in sequence from an ILS instrument approach.

(c) *Crosswind*: One crosswind approach to a hover or to the ground, if practical under the existing meteorological, airport, or traffic conditions.

(d) *Powerplant failure*: For a multiengine rotorcraft, maneuvering to a landing with simulated powerplant failure of one engine.

(e) *Rejected*: Rejected landing, including a normal missed approach procedure at approximately 50 feet above the runway. This maneuver may be combined with instrument or missed approach procedures, but instrument conditions need not be simulated below 100 feet above the runway or landing area.

(f) *Autorotative landings*: Autorotative landings in a single-engine helicopter. The applicant may be required to accomplish at least one autorotative approach and landing from any phase of flight as specified by the FAA inspector or designated examiner.

VI. Normal and Abnormal Procedures

Each applicant must demonstrate the proper use of as many systems and devices listed below as the FAA inspector or designated examiner finds are necessary to determine that the applicant has a practical knowledge of the use of the systems and devices appropriate to the helicopter type:

(a) Anti-icing or deicing systems.

(b) Autopilot or other stability augmentation devices.

(c) Airborne radar devices.

(d) Hydraulic and electrical systems failures or malfunctions.

(e) Landing gear failures or malfunctions.

(f) Failure of navigation or communications equipment.

(g) Any other system appropriate to the helicopter as outlined in the approved Rotorcraft Flight Manual.

VII. Emergency Procedures

Each applicant must demonstrate the proper emergency procedures for as many of the emergency situations listed below as the FAA inspector or designated examiner finds are necessary to determine that the applicant has adequate knowledge of, and ability to perform, such procedures:

(a) Fire or smoke control in flight.

(b) Ditching.

(c) Evacuation.

(d) Operation of emergency equipment.

(e) Emergency descent.

(f) Any other emergency procedure outline in the approved Rotorcraft Flight Manual.

PART 91—GENERAL OPERATING AND FLIGHT RULES

28. The authority citation for Part 91 is revised to read as set forth below, and the authority citations following each of the sections of Part 91 are removed:

Authority: 49 U.S.C. 1301(7), 1303, 1344, 1348, 1352 through 1355, 1401, 1421 through 1431, 1471, 1472, 1502, 1510, 1522, and 2121 through 2125; Articles 12, 29, 31, and 32(a) of the Convention on International Civil Aviation (61 Stat. 1180); 42 U.S.C. 4321 et seq.; E.O. 11514; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983).

§ 91.2 [Amended]

29. By amending § 91.2 by substituting the word "aircraft" for "airplane" after the phrase "for the operation of small" and changing the word "find" to "finds" after the phrase "Category II operations, if he".

30. By amending § 91.23 by revising paragraph (a)(3) to read as follows:

§ 91.23 Fuel requirements for flight in IFR conditions.

(a) * * *

(3) Fly after that for 45 minutes at normal cruising speed or, for helicopters, fly after that for 30 minutes at normal cruising speed.

* * * * *

31. By amending § 91.116 by revising the title, revising the first clause in the introductory text of paragraph (f), revising paragraph (f)(1), and adding paragraph (f)(3) to read as follows:

§ 91.116 Takeoff and landing under IFR: General.

* * * * *

(f) *Civil airport takeoff minimums.* Unless otherwise authorized by the Administrator, no person operating an aircraft under Part 121, 125, 127, 129, or 135 of this chapter * * *

(1) For aircraft, other than helicopters, having two engines or less—1 statute mile visibility.

* * * * *

(3) For helicopters—1/2 statute mile visibility.

* * * * *

§ 91.171 [Amended]

32. By amending § 91.171 by inserting the words "or helicopter" after the word "airplane" each time it appears in paragraphs (a), (b)(1), (b)(2)(iv), and (d).

Appendix A—[Amended]

33. By amending Part 91, Appendix A, by removing the word "airplane" and replacing it with the word "aircraft" wherever it appears and by removing the words "General Aviation District Office" in section 1(a) and inserting in

its place the words "Flight Standards District Office."

PART 133—ROTORCRAFT EXTERNAL-LOAD OPERATIONS

34. The authority citation for Part 133 is revised to read as set forth below, and the authority citations following each of the sections of Part 133 are removed:

Authority: 49 U.S.C. 1348, 1354(a), 1421, and 1427; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983).

35. By amending § 133.1 by revising paragraph (b) and adding paragraphs (c) and (d) to read as follows:

§ 133.1 Applicability.

* * * * *

(b) Operating and certification rules governing the conduct of rotorcraft external-load operations in the United States by any person.

(c) The certification rules of this part do not apply to—

(1) Rotorcraft manufacturers when developing external-load attaching means;

(2) Rotorcraft manufacturers demonstrating compliance of equipment utilized under this part or appropriate portions of Part 27 or 29 of this chapter;

(3) Operations conducted by a person demonstrating compliance for the issuance of a certificate or authorization under this part;

(4) Training flights conducted in preparation for the demonstration of compliance with this part; or

(5) A Federal, State, or local government conducting operations with public aircraft.

(d) For the purpose of this part, a person other than a crewmember or a person who is essential and directly connected with the external-load operation may be carried only in approved Class D rotorcraft-load combinations.

36. By amending § 133.11 by revising paragraph (b) to read as follows:

§ 133.11 Certificate required.

* * * * *

(b) No person holding a Rotorcraft External-Load Operator Certificate may conduct rotorcraft external-load operations subject to this part under a business name that is not on that certificate.

§ 133.13 [Amended]

37. By amending § 133.13 by placing a period after the word "renewed" and by removing the phrase ", except that a certificate issued before June 25, 1977 expires on August 10, 1979."

38. By amending § 133.21 by revising the title; by revising paragraph (b); and

by adding new paragraph (c) to read as follows:

§ 133.21 Personnel.

* * * * *

(b) The applicant must designate one pilot, who may be the applicant, as chief pilot for rotorcraft external-load operations. The applicant also may designate qualified pilots as assistant chief pilots to perform the functions of the chief pilot when the chief pilot is not readily available. The chief pilot and assistant chief pilots must be acceptable to the Administrator and each must hold a current Commercial or Airline Transport Pilot Certificate, with a rating appropriate for the rotorcraft prescribed in § 133.19.

(c) The holder of a Rotorcraft External-Load Operator Certificate shall report any change in designation of chief pilot or assistant chief pilot immediately to the FAA certificate-holding office. The new chief pilot must be designated and must comply with § 133.23 within 30 days or the operator may not conduct further operations under the Rotorcraft External-Load Operator Certificate unless otherwise authorized by the FAA certificate-holding office.

39. By amending § 133.23 by adding a new paragraph (b)(5) and by revising the introductory text of paragraph (c) to read as follows: By removing the introductory text of paragraph (c)(6); by removing "; and" in paragraph (c)(6)(i) and inserting a period in its place; and by redesignating amended paragraphs (c)(6) (i) and (ii) as (c) (6) and (7), respectively.

§ 133.23 Knowledge and skill.

* * * * *

(b) * * *

(5) Appropriate rotorcraft-load combination flight manual.

(c) The test of skill requires appropriate maneuvers for each class requested. The appropriate maneuvers for each load class must be demonstrated in the rotorcraft prescribed in § 133.19.

* * * * *

40. By amending § 133.25 by designating the current undesignated text as paragraph (a); by removing from redesignated paragraph (a) the phrase "a rotorcraft or" after the words "amendment of the applicant's certificate, to add or delete"; by amending paragraph (a) by removing the phrase "§§ 133.19, 133.21, and 133.23," and inserting the phrase "§§ 133.19 and 133.49," in its place; and by adding a new paragraph (b) to read as follows:

§ 133.25 Amendment of certificate.

(b) The holder of a rotorcraft external-load certificate may apply for an amendment to add or delete a rotorcraft authorization by submitting to the certificate-holding FAA district office a new list of rotorcraft, by registration number, with the classes of rotorcraft-load combinations for which authorization is requested.

41. By amending § 133.27 by revising paragraph (a) to read as follows:

§ 133.27 Availability, transfer, and surrender of certificate.

(a) Each holder of a rotorcraft external-load operator certificate shall keep that certificate and a list of authorized rotorcraft at the home base of operations and shall make it available for inspection by the Administrator upon request.

42. By revising § 133.31 to read as follows:

§ 133.31 Emergency operations.

(a) In an emergency involving the safety of persons or property, the certificate holder may deviate from the rules of this part to the extent required to meet that emergency.

(b) Each person who, under the authority of this section, deviates from a rule of this part shall notify the Administrator within 10 days after the deviation. Upon the request of the Administrator, that person shall provide the certificate-holding FAA district office a complete report of the aircraft operation involved, including a description of the deviation and reasons for it.

§ 133.33 [Redesignated as § 133.39]

43. By redesignating § 133.33 as § 133.39.

44. By adding a new § 133.33 to read as follows:

§ 133.33 Operating rules.

(a) No person may conduct a rotorcraft external-load operation without, or contrary to, the Rotorcraft-Load Combination Flight Manual prescribed in § 133.47.

(b) No person may conduct a rotorcraft external-load operation unless—

(1) The rotorcraft complies with § 133.19; and

(2) The rotorcraft and rotorcraft-load combination is authorized under the Rotorcraft External-Load Operator Certificate.

(c) Before a person may operate a rotorcraft with an external-load configuration that differs substantially

from any that person has previously carried with that type of rotorcraft (whether or not the rotorcraft-load combination is of the same class), that person must conduct, in a manner that will not endanger persons or property on the surface, such of the following flight-operational checks as the Administrator determines are appropriate to the rotorcraft-load combination:

(1) A determination that the weight of the rotorcraft-load combination and the location of its center of gravity are within approved limits, that the external load is securely fastened, and that the external load does not interfere with devices provided for its emergency release.

(2) Make an initial liftoff and verify that controllability is satisfactory.

(3) While hovering, verify that directional control is adequate.

(4) Accelerate into forward flight to verify that no attitude (whether of the rotorcraft or of the external load) is encountered in which the rotorcraft is uncontrollable or which is otherwise hazardous.

(5) In forward flight, check for hazardous oscillations of the external load, but if the external load is not visible to the pilot, other crewmembers or ground personnel may make this check and signal the pilot.

(6) Increase the forward airspeed and determine an operational airspeed at which no hazardous oscillation or hazardous aerodynamic turbulence is encountered.

(d) Notwithstanding the provisions of Part 91 of this chapter, the holder of a Rotorcraft External-Load Operator Certificate may conduct (in rotorcraft type certificated under and meeting the requirements of Part 27 or 29 of this chapter, including the external-load attaching means) rotorcraft external-load operations over congested areas if those operations are conducted without hazard to persons or property on the surface and comply with the following:

(1) The operator must develop a plan for each complete operation, coordinate this plan with the FAA district office having jurisdiction over the area in which the operation will be conducted, and obtain approval for the operation from that district office. The plan must include an agreement with the appropriate political subdivision that local officials will exclude unauthorized persons from the area in which the operation will be conducted, coordination with air traffic control, if necessary, and a detailed chart depicting the flight routes and altitudes.

(2) Each flight must be conducted at an altitude, and on a route, that will allow a jettisonable external load to be

released, and the rotorcraft landed, in an emergency without hazard to persons or property on the surface.

(e) Notwithstanding the provisions of Part 91 of this chapter, and except as provided in § 133.45(d), the holder of a Rotorcraft External-Load Operator Certificate may conduct external-load operations, including approaches, departures, and load positioning: maneuvers necessary for the operation, below 500 feet above the surface and closer than 500 feet to persons, vessels, vehicles, and structures, if the operations are conducted without creating a hazard to persons or property on the surface.

(f) No person may conduct rotorcraft external-load operations under IFR unless specifically approved by the Administrator. However, under no circumstances may a person be carried as part of the external-load under IFR.

45. By adding a new § 133.35 to read as follows:

§ 133.35 Carriage of persons.

(a) No certificate holder may allow a person to be carried during rotorcraft external-load operations unless that person—

(1) Is a flight crewmember;

(2) Is a flight crewmember trainee;

(3) Performs an essential function in connection with the external-load operation; or

(4) Is necessary to accomplish the work activity directly associated with that operation.

(b) The pilot in command shall ensure that all persons are briefed before takeoff on all pertinent procedures to be followed (including normal, abnormal, and emergency procedures) and equipment to be used during the external-load operation.

46. By adding a new § 133.37 to read as follows:

§ 133.37 Crewmember training, currency, and testing requirements.

(a) No certificate holder may use, nor may any person serve, as a pilot in operations conducted under this part unless that person—

(1) Has successfully demonstrated to the Administrator knowledge and skill with respect to the rotorcraft-load combination in accordance with § 133.23 (in the case of a pilot other than the chief pilot or an assistant chief pilot who has been designated in accordance with § 133.21(b), this demonstration may be made to the chief pilot or assistant chief pilot); and

(2) Has in his or her personal possession a letter of competency or an appropriate logbook entry indicating

compliance with paragraph (a)(1) of this section.

(b) No certificate holder may use, nor may any person serve as, a crewmember or other operations personnel in Class D operations conducted under this part unless, within the preceding 12 calendar months, that person has successfully completed either an approved initial or a recurrent training program.

(c) Notwithstanding the provisions of paragraph (b) of this section, a person who has performed a rotorcraft external-load operation of the same class and in an aircraft of the same type within the past 12 calendar months need not undergo recurrent training.

47. By amending § 133.41 by revising the first sentence of paragraph (a) and the introductory text of (c) and by revising paragraph (c)(5) to read as follows:

§ 133.41 Flight characteristics requirements.

(a) The applicant must demonstrate to the Administrator, by performing the operational flight checks prescribed in paragraphs (b), (c), and (d) of this section, as applicable, that the rotorcraft-load combination has satisfactory flight characteristics, unless these operational flight checks have been demonstrated previously and the rotorcraft-load combination flight characteristics were satisfactory.

(c) *Class B and D rotorcraft-load combinations:* The operational flight check must consist of at least the following maneuvers:

(5) Demonstrating appropriate lifting device operation.

48. By amending § 133.45 by removing paragraph (a); by redesignating paragraphs (b), (c), (d), and (e) as paragraphs (a), (b), (c), and (d), respectively; and by adding a new paragraph (e) to read as follows:

§ 133.45 Operating limitations.

(e) The rotorcraft-load combination of Class D may be conducted only in accordance with the following:

(1) The rotorcraft to be used must have been type certificated under transport Category A for the operating weight and provide hover capability with one engine inoperative at that operating weight and altitude.

(2) The rotorcraft must be equipped to allow direct radio intercommunication among required crewmembers.

(3) The personnel lifting device must be FAA approved.

(4) The lifting device must have an emergency release requiring two distinct actions.

49. By amending § 133.47 by revising paragraph (c)(2) to read as follows:

§ 133.47 Rotorcraft-load combination flight manual.

(2) Precautionary advice regarding static electricity discharges for Class B, Class C, and Class D rotorcraft-load combinations; and

50. By revising § 133.51 to read as follows:

§ 133.51 Airworthiness certification.

A Rotorcraft External-Load Operator Certificate is a current and valid airworthiness certificate for each rotorcraft type certificated under Part 27 or 29 of this chapter (or their predecessor parts) and listed by registration number on a list attached to the certificate, when the rotorcraft is being used in operations conducted under this part.

PART 135—AIR TAXI OPERATOR AND COMMERCIAL OPERATORS

51. The authority citation for Part 135 is revised to read as set forth below, and the authority citations following each of the sections of Part 135 are removed:

Authority: 49 U.S.C. 1354(a), 1355(a), 1421 through 1431, and 1502; 49 U.S.C. 106(g) (Revised Pub. L. 97-449, January 12, 1983).

52. By amending § 135.1 by revising paragraph (b)(4)(vi) to read as follows:

§ 135.1 Applicability.

(vi) Powerline or pipeline patrol, or similar types of patrol approved by the Administrator;

53. By amending § 135.23 by revising paragraph (a) to read as follows:

§ 135.23 Manual contents.

(a) The name of each management person required under § 135.37(a) who is authorized to act for the certificate holder, the person's assigned area of responsibility, the person's duties, responsibilities, and authority, and the name and title of each person authorized to exercise operational control under § 135.77;

54. By amending § 135.39 by revising paragraph (b)(2)(i) to read as follows:

§ 135.39 Management personnel qualifications.

(i) Hold a current, commercial pilot certificate with an instrument rating. If an instrument rating is not required for the pilot in command under this part, the chief pilot must hold a current commercial pilot certificate; and

55. By amending § 135.117 by revising paragraph (c) and adding new paragraphs (d), (e), and (f) to read as follows:

§ 135.117 Briefing of passengers before flight.

(c) The oral briefing required by paragraph (a) of this section shall be given by the pilot in command or a crewmember.

(d) Notwithstanding the provisions of paragraph (c) of this section, for aircraft certificated to carry 19 passengers or less, the oral briefing required by paragraph (a) of this section shall be given by the pilot in command, a crewmember, or other qualified person designated by the certificate holder and approved by the Administrator.

(e) The oral briefing required by paragraph (a) shall be supplemented by printed cards which must be carried in the aircraft in locations convenient for the use of each passenger. The cards must—

(1) Be appropriate for the aircraft on which they are to be used;

(2) Contain a diagram of, and method of operating, the emergency exits; and

(3) Contain other instructions necessary for the use of emergency equipment on board the aircraft.

(f) The briefing required by paragraph (a) may be delivered by means of an approved recording playback device that is audible to each passenger under normal noise levels.

56. By amending § 135.159 by revising paragraphs (a) through (f) and by adding new paragraphs (g) and (h) to read as follows:

§ 135.159 Equipment requirements: Carrying passengers under VFR at night or under VFR over-the-top conditions.

(a) A gyroscopic rate-of-turn indicator except on the following aircraft:

(1) Helicopters with a third attitude instrument system usable through flight attitudes of ± 80 degrees of pitch and ± 120 degrees of roll and installed in accordance with § 29.1303(g) of this chapter.

(2) Helicopters with a maximum certificated takeoff weight of 6,000 pounds or less.

(b) A slip skid indicator.

(c) A gyroscopic bank-and-pitch indicator.

(d) A gyroscopic direction indicator.

(e) A generator or generators able to supply all probable combinations of continuous in-flight electrical loads for required equipment and for recharging the battery.

(f) For night flights—

(1) An anticollision light system;

(2) Instrument lights to make all instruments, switches, and gauges easily readable, the direct rays of which are shielded from the pilots' eyes; and

(3) A flashlight having at least two size "D" cells or equivalent.

(g) For the purpose of paragraph (e) of this section, a continuous in-flight electrical load includes one that draws current continuously during flight, such as radio equipment and electrically driven instruments and lights, but does not include occasional intermittent loads.

(h) Notwithstanding provisions of paragraphs (b), (c), and (d), helicopters having a maximum certificated takeoff weight of 6,000 pounds or less may be operated until January 6, 1988, under visual flight rules at night without a slip skid indicator, a gyroscopic bank-and-pitch indicator, or a gyroscopic direction indicator.

57. By amending § 135.167 by redesignating paragraph (b) as (c); by revising paragraphs (a) (1) and (2); and by adding a new paragraph (b) to read as follows:

§ 135.167 Emergency equipment: Extended overwater operations.

(a) ***

(1) An approved life preserver equipped with an approved survivor locator light for each occupant of the aircraft. The life preserver must be easily accessible to each seated occupant.

(2) Enough approved liferafts of a rated capacity and buoyancy to accommodate the occupants of the aircraft.

(b) Each liferaft required by paragraph (a) of this section must be equipped with or contain at least the following:

(1) One approved survivor locator light.

(2) One approved pyrotechnic signaling device.

(3) Either—

(i) One survival kit, appropriately equipped for the route to be flown; or

(ii) One canopy (for sail, sunshade, or rain catcher);

(iii) One radar reflector;

(iv) One liferaft repair kit;

(v) One bailing bucket;

(vi) One signaling mirror;

(vii) One police whistle;

(viii) One raft knife;

(ix) One CO₂ bottle for emergency inflation;

(x) One inflation pump;

(xi) Two oars;

(xii) One 75-foot retaining line;

(xiii) One magnetic compass;

(xiv) One dye marker;

(xv) One flashlight having at least two size "D" cells or equivalent;

(xvi) A 2-day supply of emergency food rations supplying at least 1,000 calories per day for each person;

(xvii) For each two persons the raft is rated to carry, two pints of water or one sea water desalting kit;

(xviii) One fishing kit; and

(xix) One book on survival appropriate for the area in which the aircraft is operated.

58. By amending § 135.173 by redesignating paragraphs (b), (c), (d), and (e) as (c), (d), (e), and (f), respectively; by amending redesignated paragraph (c) by inserting the phrase "(b)" after the words "required by paragraph (a)"; by revising paragraph (a); and by adding a new paragraph (b) to read as follows:

§ 135.173 Airborne thunderstorm detection equipment requirements.

(a) No person may operate an aircraft that has a passenger seating configuration, excluding any pilot seat, of 10 seats or more in passenger-carrying operations, except a helicopter operating under day VFR conditions, unless the aircraft is equipped with either approved thunderstorm detection equipment or approved airborne weather radar equipment.

(b) After January 6, 1988, no person may operate a helicopter that has a passenger seating configuration, excluding any pilot seat, of 10 seats or more in passenger-carrying operations, under night VFR when current weather reports indicate that thunderstorms or other potentially hazardous weather conditions that can be detected with airborne thunderstorm detection equipment may reasonably be expected along the route to be flown, unless the helicopter is equipped with either approved thunderstorm detection equipment or approved airborne weather radar equipment.

59. By amending § 135.181 by redesignating paragraphs (b) and (c) as (c) and (d), respectively, and by adding a new paragraph (b) to read as follows:

§ 135.181 Performance requirements: Aircraft operated over-the-top or in IFR conditions.

(b) Notwithstanding the restrictions in paragraph (a)(2) of this section, multiengine helicopters carrying passengers offshore may conduct such operations in over-the-top or in IFR conditions at a weight that will allow the helicopter to climb at least 50 feet per minute with the critical engine inoperative when operating at the MEA of the route to be flown or 1,500 feet MSL, whichever is higher:

60. By amending § 135.223 by revising paragraph (a)(3) to read as follows:

§ 135.223 IFR: Alternate airport requirements.

(a) ***

(3) Fly after that for 45 minutes at normal cruising speed or, for helicopters, fly after that for 30 minutes at normal cruising speed.

61. By amending § 135.227 by redesignating paragraphs (c) and (d) as (d) and (e), respectively; by amending newly designated paragraph (e) by inserting the phrase "the restrictions in paragraphs (b), (c), and (d)" in place of "the restrictions in paragraphs (b) and (c)"; and by adding a new paragraph (c) to read as follows:

§ 135.227 Icing conditions: Operating limitations.

(c) No pilot may fly a helicopter under IFR into known or forecast icing conditions or under VFR into known icing conditions unless it has been type certificated and appropriately equipped for operations in icing conditions.

62. By amending § 135.429 by redesignating paragraph (d) as (e) and by adding a new paragraph (d) to read as follows:

§ 135.429 Required inspection personnel.

(d) In the case of rotorcraft that operate in remote areas or sites, the Administrator may approve procedures for the performance of required inspection items by a pilot when no other qualified person is available, provided—

(1) The pilot is employed by the certificate holder;

(2) It can be shown to the satisfaction of the Administrator that each pilot authorized to perform required inspections is properly trained and qualified;

(3) The required inspection is a result of a mechanical interruption and is not a part of a certificate holder's continuous airworthiness maintenance program;

(4) Each item is inspected after each flight until the item has been inspected by an appropriately certificated mechanic other than the one who originally performed the item of work; and

(5) Each item of work that is a required inspection item that is part of the flight control system shall be flight tested and reinspected before the aircraft is approved for return to service.

* * * * *

Issued in Washington, DC on October 31, 1986.

Donald D. Engen,

Administrator.

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