

ASA's FAR-AMT 2009 Update

8/12/09

Changes to the Federal Aviation Regulations can occur daily via the Federal Registers, and the *Aeronautical Information Manual* is updated every 6 months. ASA keeps you current by publishing the FAR/AIM series annually, providing online Updates and an email subscription service so you're notified when a change affecting the information in your book has been made. ASA's Updates provide regulation changes shortly after their release, and includes final rules released by the FAA but not yet effective.

ASA's 2009 FAR-AMT book is current through June 24, 2008. With this Update, it is current through **August 12, 2009**.

All rule changes are listed by RELEASE DATE.



MISCELLANEOUS

The FAA released their new *Inspection Authorization Test Guide* (FAA-G-8082-11B) in September 2008. For your convenience, a PDF of this guide is available on the IA Test Prep "Reader Resources" page on ASA's website at the following address:

www.asa2fly.com/reader/ia

§91.177: On Page 389 of ASA's FAR-AMT book, remove the paragraph that begins "However, if both a MEA and a MOCA..."

AUGUST 4, 2009

Effective date: August 4, 2009

Part 135—Operating Requirements; Commuter and On Demand Operations and Rules Governing Persons On Board Such Aircraft

Amend Section 135.427 by revising paragraph (a) to read:

§135.427 Manual requirements.

(a) Each certificate holder shall put in its manual the chart or description of the certificate holder's organization required by §135.423 and a list of persons with whom it has arranged for the performance of any of its required inspections, other maintenance, preventive maintenance, or alterations, including a general description of that work.

* * * * *

[As amended by Amdt. 135-118, 74 FR 38522, Aug. 4, 2009]

AUGUST 3, 2009

Effective date: September 2, 2009

Part 25—Airworthiness Standards, Transport Category Airplanes

Part 25 is available as a free download from www.asa2fly.com

Amend Section 25.143 by revising paragraph (j). Amend Section 25.207 by revising paragraphs (b) and (h), and adding a new paragraph (i). Amend Section 25.1419 by adding new paragraphs (e), (f), (g), and (h). Amend Appendix C by revising part II (e).

[As amended by Amdt. 25-129, 74 FR 38340, Aug. 3, 2009]

JULY 30, 2009

Effective date: September 28, 2009

Part 33—Airworthiness Standards: Aircraft Engines

Section 33.17 is revised to read as follows:

§33.17 Fire protection.

(a) The design and construction of the engine and the materials used must minimize the probability of the occurrence and spread of fire during normal operation and failure conditions, and must minimize the effect of such a fire. In addition, the design and construction of turbine engines must minimize the probability of the occurrence of an internal fire that could result in structural failure or other hazardous effects.

(b) Except as provided in paragraph (c) of this section, each external line, fitting, and other component, which contains or conveys flammable fluid during normal engine operation, must be fire resistant or fireproof, as determined by the Administrator. Components must be shielded or located to safeguard against the ignition of leaking flammable fluid.

(c) A tank, which contains flammable fluids and any associated shut-off means and supports, which are part of and attached to the engine, must be fireproof either by construction or by protection unless damage by fire will not cause leakage or spillage of a

hazardous quantity of flammable fluid. For a reciprocating engine having an integral oil sump of less than 23.7 liters capacity, the oil sump need not be fireproof or enclosed by a fireproof shield.

(d) An engine component designed, constructed, and installed to act as a firewall must be:

(1) Fireproof;

(2) Constructed so that no hazardous quantity of air, fluid or flame can pass around or through the firewall; and,

(3) Protected against corrosion;

(e) In addition to the requirements of paragraphs (a) and (b) of this section, engine control system components that are located in a designated fire zone must be fire resistant or fireproof, as determined by the Administrator.

(f) Unintentional accumulation of hazardous quantities of flammable fluid within the engine must be prevented by draining and venting.

(g) Any components, modules, or equipment, which are susceptible to or are potential sources of static discharges or electrical fault currents must be designed and constructed to be properly grounded to the engine reference, to minimize the risk of ignition in external areas where flammable fluids or vapors could be present.

[Docket No. FAA-2007-28503, 74 FR 37930, July 30, 2009]

JULY 9, 2009

Part 23—Airworthiness Standards: Normal, Utility, Acrobatic, and Commuter Category Airplanes

Amend Section 23.1457 by revising paragraph (d)(1) to read:

§23.1457 Cockpit voice recorders.

* * * * *

(d) * * *

(1)(i) It receives its electrical power from the bus that provides the maximum reliability for operation of the cockpit voice recorder without jeopardizing service to essential or emergency loads.

(ii) It remains powered for as long as possible without jeopardizing emergency operation of the airplane.

* * * * *

[As amended by Amdt. 23-58, 74 FR 32799, July 9, 2009]

Amend Section 23.1459 by revising paragraph (a)(3) to read:

§23.1459 Flight data recorders.

(a) * * *

(3)(i) It receives its electrical power from the bus that provides the maximum reliability for operation of the flight data recorder without jeopardizing service to essential or emergency loads.

(ii) It remains powered for as long as possible without jeopardizing emergency operation of the airplane.

* * * * *

[As amended by Amdt. 23-58, 74 FR 32800, July 9, 2009]

Part 25—Airworthiness Standards: Transport Category Airplanes

**Part 25 is available as a free download from
www.asa2fly.com**

Amend Section 25.1457 by revising paragraph (d)(1). Amend Section 25.1459 by revising paragraph (a)(3).

[As amended by Amdt. 25-124, 74 FR 32800, July 9, 2009]

Amend Section 25.1459 by revising paragraph (a)(3) to read:

§25.1459 Flight data recorders.

(a) * * *

(3)(i) It receives its electrical power from the bus that provides the maximum reliability for operation of the flight data recorder without jeopardizing service to essential or emergency loads.

(ii) It remains powered for as long as possible without jeopardizing emergency operation of the airplane.

* * * * *

[As amended by Amdt. 25-124, 74 FR 32800, July 9, 2009]

Part 27—Airworthiness Standards: Normal Category Rotorcraft

Amend Section 27.1457 by revising paragraph (d)(1) to read:

§27.1457 Cockpit voice recorders.

* * * * *

(d) * * *

(1)(i) It receives its electrical power from the bus that provides the maximum reliability for operation of the cockpit voice recorder without jeopardizing service to essential or emergency loads.

(ii) It remains powered for as long as possible without jeopardizing emergency operation of the airplane.

* * * * *

[As amended by Amdt. 27-43, 74 FR 32800, July 9, 2009]

Amend Section 27.1459 by revising paragraph (a)(3) to read:

§27.1459 Flight data recorders.

(a) * * *

(3)(i) It receives its electrical power from the bus that provides the maximum reliability for operation of the flight data recorder without jeopardizing service to essential or emergency loads.

(ii) It remains powered for as long as possible without jeopardizing emergency operation of the airplane.

* * * * *

[As amended by Amdt. 27-43, 74 FR 32800, July 9, 2009]

Part 91—General Operating and Flight Rules

Amend Section 91.609 by revising paragraph (e)(1) to read:

§91.609 Flight data recorders and cockpit voice recorders.

* * * * *

(e) * * *

(1) Is installed in compliance with §23.1457(a)(1) and (2), (b), (c), (d)(1)(i), (2) and (3), (e), (f), and (g); §25.1457(a)(1) and (2), (b), (c), (d)(1)(i), (2) and (3), (e), (f), and (g); §27.1457(a)(1) and (2), (b), (c), (d)(1)(i), (2) and (3), (e), (f), and (g); or §29.1457(a)(1) and (2), (b), (c), (d)(1)(i), (2) and (3), (e), (f), and (g) of this chapter, as applicable; and

* * * * *

[As amended by Amdt. 91-300, 74 FR 32800, July 9, 2009]

Part 121—Operating Requirements: Domestic, Flag, and Supplemental Operations

Amend Section 121.344 by revising paragraph (j) introductory text to read as follows:

§121.344 Digital flight data recorders for transport category airplanes.

* * * * *

(j) Each flight data recorder system required by this section must be installed in accordance with the requirements of §25.1459(a) (except paragraphs (a)(3)(ii) and (a)(7)), (b), (d) and (e) of this chapter. A correlation must be established between the values recorded by the flight data recorder and the corresponding values being measured. The correlation must contain a sufficient number of correlation points to accurately establish the conversion from the recorded values to engineering units or discrete state over the full operating range of the parameter. Except for airplanes having separate altitude and airspeed sensors that are an integral part of the flight data recorder system, a single correlation may be established for any group of airplanes—

* * * * *

[As amended by Amdt. 121–338, 74 FR 32800, July 9, 2009]

Amend §121.344a by revising paragraph (d) introductory text to read as follows:

§121.344a Digital flight data recorders for 10-19 seat airplanes.

* * * * *

(d) Each flight data recorder system required by this section must be installed in accordance with the requirements of §23.1459(a) (except paragraphs (a)(3)(ii) and (6)), (b), (d) and (e) of this chapter. A correlation must be established between the values recorded by the flight data recorder and the corresponding values being measured. The correlation must contain a sufficient number of correlation points to accurately establish the conversion from the recorded values to engineering units or discrete state over the full operating range of the parameter. A single correlation may be established for any group of airplanes—

* * * * *

[As amended by Amdt. 121–338, 74 FR 32801, July 9, 2009]

Amend Section 121.359 by revising paragraphs (d)(1) and (e)(1) to read as follows:

§121.359 Cockpit voice recorders.

* * * * *

(d) ***

(1) Is installed in compliance with §23.1457(a)(1) and (2), (b), (c), (d)(1)(i), (2) and (3), (e), (f), and (g); or §25.1457(a)(1) and (2), (b), (c), (d)(1)(i), (2) and (3), (e), (f), and (g) of this chapter, as applicable; and

* * * * *

(e) ***

(1) Is installed in compliance with §23.1457 (except paragraphs (d)(1)(ii), (4) and (5)) or §25.1457 (except paragraphs (d)(1)(ii), (4) and (5)) of this chapter, as applicable; and

* * * * *

[As amended by Amdt. 121–338, 74 FR 32801, July 9, 2009]

Part 125—Certification and Operations: Airplanes Having a Seating Capacity of 20 or More Passengers or a Maximum Payload Capacity of 6,000 Pounds or More; and Rules Governing Persons On Board Such Aircraft

Amend §125.226 by revising paragraph (j) introductory text to read:

§125.226 Digital flight data recorders.

* * * * *

(j) Each flight data recorder system required by this section must be installed in accordance with the requirements of §25.1459(a) (except paragraphs (a)(3)(ii) and (7)), (b), (d) and (e) of this chapter. A correlation must be established between the values recorded by the flight data recorder and the corresponding values being measured. The correlation must contain a sufficient number of correlation points to accurately establish the conversion from the recorded values to engineering units or discrete state over the full operating range of the parameter. Except for airplanes having separate altitude and airspeed sensors that are an integral part of the flight data recorder system, a single correlation may be established for any group of airplanes—

* * * * *

[As amended by Amdt. 125–54, 74 FR 32801, July 9, 2009]

Amend 125.227 by revising paragraph (h)(1) to read as follows:

§125.227 Cockpit voice recorders.

* * * * *

(h) ***

(1) Meets the requirements of §25.1457(a)(3) through (a)(6), (d)(1), (d)(4), (d)(5), (d)(6), and (e) of this chapter;

* * * * *

[As amended by Amdt. 125–54, 74 FR 32801, July 9, 2009]

Part 135—Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons On Board Such Aircraft

Amend Section 135.151 by revising paragraphs (a)(1) and (b)(1) to read as follows:

§135.151 Cockpit voice recorders.

* * * * *

(a) ***

(1) Is installed in compliance with §23.1457(a)(1) and (2), (b), (c), (d)(1)(i), (2) and (3), (e), (f), and (g); §25.1457(a)(1) and (2), (b), (c), (d)(1)(i), (2) and (3), (e), (f), and (g), §27.1457(a)(1) and (2), (b), (c), (d)(1)(i), (2) and (3), (e), (f), and (g); or §29.1457(a)(1) and (2), (b), (c), (d)(1)(i), (2) and (3), (e), (f), and (g) of this chapter, as applicable; and

* * * * *

(b) ***

(1) Is installed in compliance with §23.1457 (except paragraphs (d)(1)(ii), (4) and (5)), §25.1457 (except paragraphs (d)(1)(ii), (4) and (5)), §27.1457 (except paragraphs (d)(1)(ii), (4) and (5)) or §29.1457 (except paragraphs (d)(1)(ii), (4) and (5)) of this chapter, as applicable; and

* * * * *

[As amended by Amdt. 135–113, 74 FR 32801, July 9, 2009]

Amend Section 135.152 by revising paragraphs (f)(1) introductory text and (f)(2) introductory text to read as follows:

§135.152 Flight data recorders.

* * * * *

(f)(1) For airplanes manufactured on or before August 18, 2000, and all other aircraft, each flight recorder required by this section must be installed in accordance with the requirements of §23.1459 (except paragraphs (a)(3)(ii) and (6)), §25.1459 (except paragraphs (a)(3)(ii) and (7)), §27.1459 (except paragraphs (a)(3)(ii) and (6)), or §29.1459 (except paragraphs (a)(3)(ii) and (6)), as appropriate, of this chapter. The correlation required by paragraph (c) of §§23.1459, 25.1459, 27.1459, or 29.1459 of this chapter, as appropriate, need be established only on one aircraft of a group of aircraft:

* * * * *

(2) For airplanes manufactured after August 18, 2000, each flight data recorder system required by this section must be installed in accordance with the requirements of §23.1459(a) (except paragraphs (a)(3)(ii) and (6)), (b), (d) and (e), or §25.1459(a) (except paragraphs (a)(3)(ii) and (7)), (b), (d) and (e) of this chapter. A correlation must be established between the values recorded by the flight data recorder and the corresponding values being measured. The correlation must contain a sufficient number of correlation points to accurately establish the conversion from the recorded values to engineering units or discrete state over the full operating range of the parameter. Except for airplanes having separate altitude and airspeed sensors that are an integral part of the flight data recorder system, a single correlation may be established for any group of airplanes—

* * * * *

[As amended by Amdt. 135–113, 74 FR 32801, July 9, 2009]

JULY 9, 2009

Part 91—General Operating and Flight Rules

Section 91.146(b) introductory text is revised to read as follows:

§91.146 Passenger-carrying flights for the benefit of a charitable, nonprofit, or community event.

* * * * *

(b) Passenger carrying flights for the benefit of a charitable, nonprofit, or community event identified in paragraph (c) of this section are not subject to the certification requirements of part 119 or the drug and alcohol testing requirements in part 120 of this chapter, provided the following conditions are satisfied and the limitations in paragraphs (c) and (d) are not exceeded:

* * * * *

[As amended by Amdt. 91–308, 74 FR 32804, July 9, 2009]

**Part 125—Certification and Operations:
Airplanes Having a Seating Capacity of 20 or More Passengers or a Maximum Payload Capacity of 6,000 Pounds or More; and Rules Governing Persons On Board Such Aircraft**

Amend Section 125.226 by revising paragraphs (f)(1) and (n) to read as follows:

§125.226 Digital flight data recorders.

* * * * *

(f) * * *

(1) The parameters listed in paragraphs (a)(1) through (a)(88) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in Appendix E to this part.

* * * * *

(n) In addition to all other applicable requirements of this section, all Boeing 737 model airplanes manufactured after August 18, 2000 must record the parameters listed in paragraphs (a)(88) through (a)(91) of this section within the ranges, accuracies, resolutions, and recording intervals specified in Appendix E to this part. Compliance with this paragraph is required no later than February 2, 2011.

[As amended at Docket No. FAA–1999–6482, 74 FR 32804, July 9, 2009]

Part 26—Continued Airworthiness and Safety Improvements for Transport Category Airplanes

to various types of entities. The specific applicability of each subpart and section is specified in the regulatory text.

Revise Section 26.5 to read as follows:

§26.5 Applicability table.

Table 1 of this section provides an overview of the applicability of this part. It provides guidance in identifying what sections apply

TABLE 1—APPLICABILITY OF PART 26 RULES

	Applicable sections		
	Subpart B	Subpart D	Subpart E
	EAPAS/FTS	Fuel tank flammability	Damage tolerance data
Effective date of rule	December 10, 2007	December 26, 2008	January 11, 2008
Existing ¹ TC Holders	26.11	26.33	26.43, 26.45, 26.49
Pending ¹ TC Applicants	26.11	26.37	26.43, 26.45
Existing ¹ STC Holders	N/A	26.35	26.47, 26.49
Pending ¹ STC/ATC Applicants	26.11	26.35	26.45, 26.47, 26.49
Future ² STC/ATC Applicants	26.11	26.35	26.45, 26.47, 26.49
Manufacturers	N/A	26.39	N/A

¹ As of the effective date of the identified rule.

² Application made after the effective date of the identified rule.

[As amended by Amdt. 26–3, 74 FR 31618, July 2, 2009]

§26.33 [Amended]

Amend Section 26.33 as follows:

- A. In paragraph (b)(1), remove “September 19, 2008,” and add “December 26, 2008,” in its place.
- B. In paragraph (d) introductory text, remove “September 20, 2010,” and add “December 27, 2010,” in its place.
- C. In paragraph (d)(2) remove “September 19, 2008,” and add “December 26, 2008,” in its place.
- D. In paragraph (e), remove “September 20, 2010,” and add “December 27, 2010,” in its place.
- E. In paragraph (f), remove “September 20, 2010,” and add “December 27, 2010,” in its place.
- F. In paragraph (g) introductory text, remove “September 19, 2008,” and add “December 26, 2008,” in its place.
- G. In paragraph (h) introductory text, remove “September 19, 2008,” and add “December 26, 2008,” in its place.

[As amended by Amdt. 26–3, 74 FR 31619, July 2, 2009]

Amend Section 26.35 as follows:

- A. In paragraph (a)(1), remove “September 19, 2008,” and add “December 26, 2008,” in its place.
 - B. In paragraph (a)(2), remove “September 19, 2008,” and add “December 26, 2008,” in its place, in both places.
 - C. In paragraph (a)(3) introductory text, remove “September 19, 2008,” and add “after December 26, 2008,” in its place.
 - D. In paragraph (b) introductory text, remove “Flammability Exposure Analysis—” and add “Flammability Exposure Analysis.” in its place.
 - E. In paragraph (b)(1)(i), remove “September 19, 2008,” and add “December 26, 2008,” in its place.
 - F. In paragraph (b)(1)(ii), remove “September 19, 2008,” and add “December 26, 2008,” in its place.
 - G. In paragraph (b)(2)(i), remove “September 19, 2008,” and add “December 26, 2008,” in its place.
 - H. In paragraph (c)(1), remove “March 21, 2011,” and add “June 26, 2011,” in its place.
 - I. In paragraph (c)(2), remove “March 21, 2011,” and add “June 26, 2011,” in its place.
 - J. In paragraph (d)(2), remove “September 19, 2008,” and add “December 26, 2008,” in its place.
 - K. In paragraph (e)(1), remove “September 19, 2012,” and add “December 26, 2012,” in its place.
 - L. In paragraph (e)(2), remove “September 19, 2012,” and add “December 26, 2012,” in its place.
 - M. Revise the table in paragraph (f)(4) to read as set forth below.
- [As amended by Amdt. 26–3, 74 FR 31619, July 2, 2009]

§26.35 Changes to type certificates affecting fuel tank flammability.

(f) ***
(4) ***

* * * * *

TABLE 2—COMPLIANCE PLANNING DATES

	Flammability exposure analysis plan	Impact assessment plan	Design changes and service instructions plan
STC and Field Approval Holders	March 26, 2009	February 26, 2011	August 26, 2011

* * * * *

[As amended by Amdt. 26–3, 74 FR 31619, July 2, 2009]

§26.37 [Amended]

Amend Section 26.37 as follows:

- A. In paragraph (a) introductory text, remove “September 19, 2008,” the first place it appears and add “December 26, 2008,” in its place; and remove “September 19, 2008,” the second place it appears and add “before December 26, 2008,” in its place.
- B. In paragraph (b), remove “September 19, 2008,” and add “December 26, 2008,” in its place.

[As amended by Amdt. 26–3, 74 FR 31619, July 2, 2009]

§26.39 [Amended]

Amend Section 26.39 as follows:

- A. In paragraph (a), remove “September 20, 2010,” and add “December 27, 2010,” in its place.
- B. In paragraph (b) introductory text, remove “September 19, 2008,” and add “December 26, 2008,” in its place.
- C. In paragraph (c), remove “September 19, 2008,” and add “December 26, 2008,” in its place.

[As amended by Amdt. 26–3, 74 FR 31619, July 2, 2009]

Part 121—Operating Requirements: Domestic, Flag and Supplemental Operations

§121.1117 [Amended]

Amend Section 121.1117 as follows:

- A. In paragraph (b), remove “September 20, 2010,” and add “December 27, 2010,” in its place.
- B. In paragraph (e)(1), remove “September 19, 2014,” and add “December 26, 2014,” in its place.
- C. In paragraph (e)(2), remove “September 19, 2017,” and add “December 26, 2017,” in its place.
- D. In paragraph (e)(3), remove “September 19, 2017,” and add “December 26, 2017,” in its place.
- E. In paragraph (k)(1), remove “December 18, 2008,” and add “March 26, 2009,” in its place.
- F. In paragraph (k)(2), remove “March 18, 2009,” and add “June 24, 2009,” in its place.
- G. In paragraph (l), remove “September 19, 2008,” and add “December 26, 2008,” in its place.
- H. In paragraph (n), remove “September 19, 2017,” and add “December 26, 2017,” in its place; and remove “September 19, 2008,” and adding “December 26, 2008,” in its place.
- I. In paragraph (o)(3), remove “Armstrong Viscount” and add “VC-10” in its place.
- J. Remove paragraph (o)(12) and redesignate paragraphs (o)(13) through (o)(18) as paragraphs (o)(12) through (o)(17), respectively.
- K. In the newly-redesignated paragraph (o)(13), remove the words “Handley Page” the first time they appear.

[As amended by Amdt. 121–345, 74 FR 31619, July 2, 2009]

Part 125—Certification and Operations; Airplanes Having a Seating Capacity of 20 or More Passengers or a Maximum Payload Capacity of 6,000 Pounds or More; and Rules Governing Persons On Board Such Aircraft

Amend Section 125.509 as follows:

- A. In paragraph (b), remove “September 20, 2010,” and add “December 27, 2010,” in its place.
- B. In paragraph (e)(1), remove “September 19, 2014,” and add “December 26, 2014,” in its place.
- C. In paragraph (e)(2), remove “September 19, 2017,” and add “December 26, 2017,” in its place.
- D. In paragraph (e)(3), remove “September 19, 2017,” and add “December 26, 2017,” in its place.
- E. In paragraph (l), remove “September 19, 2017” and add “December 26, 2017,” in its place; and remove “September 19, 2008” and add “December 26, 2008,” in its place.
- F. In paragraph (m)(3), remove “Armstrong Viscount” and add “VC-10” in its place.
- G. Remove paragraph (m)(12) and redesignate paragraphs (m)(13) through (m)(18) as paragraphs (m)(12) through (m)(17).
- H. In newly redesignated paragraph (m)(13), remove the words “Handley Page” the first time they appear.
- I. Add Table 2 immediately after paragraph (k) to read as set forth below.

The addition reads as follows:

[As amended by Amdt. 125–57, 74 FR 31620, July 2, 2009]

§125.509 Flammability reduction means.

* * * * *

(k) ***

TABLE 2

Model—Boeing	Model—Airbus
747 Series	A318, A319, A320, A321 Series
737 Series	A300, A310 Series
777 Series	A330, A340 Series
767 Series	
757 Series	

* * * * *

[As amended by Amdt. 125–57, 74 FR 31620, July 2, 2009]

MAY 29, 2009

**Part 25—Airworthiness Standards:
Transport Category Airplanes**

§25.812, 25.813, and Appendix F are revised.

[As amended by Amdt. 25–128, 74 FR 25645, May 29, 2009]

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MAY 14, 2009

Effective Date: July 13, 2009

**Part 65—Certification: Airmen Other Than Flight
Crewmembers**

§65.23 [Removed and Reserved]

Section 65.23 is removed and reserved.

§65.46 [Removed and Reserved]

Section 65.46 is removed and reserved.

§65.46a [Removed and Reserved]

Section 65.46a is removed and reserved.

§65.46b [Removed and Reserved]

Section 65.46b is removed and reserved.

[As amended by Amdt. 65–53, 74 FR 22652, May 14, 2009]

Part 91—General Operating and Flight Rules

Section 91.147(d) is revised to read as follows:

§91.147 Passenger-carrying flights for compensation or hire.

* * * * *

(d) The Operator must register and implement its drug and alcohol testing programs in accordance with part 120 of this chapter.

* * * * *

[As amended by Amdt. 91–307, 74 FR 22652, May 14, 2009]

Section 91.1047(c)(3) is revised to read as follows:

§91.1047 Drug and alcohol misuse education program.

* * * * *

(c) * * *

(3) The degree to which the program manager's company testing program is comparable to the federally mandated drug and alcohol testing program required under part 120 of this chapter regarding the information in paragraphs (c)(1) and (c)(2) of this section.

* * * * *

[As amended by Amdt. 91–307, 74 FR 22653, May 14, 2009]

**Part 135—Operating Requirements: Commuter and
On Demand Operations and Rules Governing
Persons On Board Such Aircraft**

Section 135.1(a)(5) is revised to read as follows:

§135.1 Applicability

(a) * * *

(5) Nonstop Commercial Air Tour flights conducted for compensation or hire in accordance with §119.1(e)(2) of this chapter that begin and end at the same airport and are conducted within a 25-statute-mile radius of that airport; provided further that these operations must comply only with the drug and alcohol testing requirements in §§120.31, 120.33, 120.35, 120.37, and 135.39 of this chapter; and with the provisions of part 136, subpart A, and §91.147 of this chapter by September 11, 2007.

* * * * *

§135.249 [Removed and Reserved]

Section 135.249 is removed and reserved.

§135.251 [Removed and Reserved]

Section 135.251 is removed and reserved.

§135.253 [Removed and Reserved]

Section 135.253 is removed and reserved.

§135.255 [Removed and Reserved]

Section 135.255 is removed and reserved.

§135.353 [Removed and Reserved]

Section 135.353 is removed and reserved.

[As amended by Amdt. 135–11774, FR 22668, May 14, 2009]

MAY 8, 2009

**Part 25—Airworthiness Standards:
Transport Category Airplanes**

In Part 25, add SFAR No.109.

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MAY 1, 2009

Effective Date: June 30, 2009

Part 91—General Operating and Flight Rules

Revise Section 91.175(f)(3) to read as follows:

§91.175 Takeoff and landing under IFR.

* * * * *

(f) * * *

(3) Except as provided in paragraph (f)(4) of this section, no pilot may takeoff under IFR from a civil airport having published obstacle departure procedures (ODPs) under part 97 of this chapter for the takeoff runway to be used, unless the pilot uses such ODPs or an alternative procedure or route assigned by air traffic control.

* * * * *

[As amended by Amdt. 91–306, 74 FR 20205, May 1, 2009]

Part 135—Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons On Board Such Aircraft

In Section 135.161, revise paragraphs (a)(1) and (a)(3) to read:

§135.161 Communication and navigation equipment for aircraft operations under VFR over routes navigated by pilotage.

(a) * * *

(1) Communicate with at least one appropriate station from any point on the route, except in remote locations and areas of mountainous terrain where geographical constraints make such communication impossible.

* * * * *

(3) Receive meteorological information from any point en route, except in remote locations and areas of mountainous terrain where geographical constraints make such communication impossible.

* * * * *

[As amended by Amdt. 135-116, 74 FR 20205, May 1, 2009]

APRIL 28, 2009

DATES: This amendment becomes effective June 29, 2009. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 29, 2009.

Part 34—Fuel Venting and Exhaust Emission Requirements for Turbine Engine Powered Airplanes

Amend Section 34.21 to add new paragraph (d)(1)(vi) to read:

§34.21 Standards for exhaust emissions.

* * * * *

(d) * * *

(1) * * *

(vi) The emission standards of this paragraph apply as prescribed after December 18, 2005. For engines of a type or model of which the first individual production model was manufactured after December 31, 2003:

(A) That have a rated pressure ratio of 30 or less and a maximum rated output greater than 89 kilonewtons: Oxides of Nitrogen: (19 + 1.6 (rPR)) grams/kilonewtons rO.

(B) That have a rated pressure ratio of 30 or less and a maximum rated output greater than 26.7 kilonewtons but not greater than 89 kilonewtons: Oxides of Nitrogen: (37.572 + 1.6(rPR) – 0.2087(rO)) grams/kilonewtons rO.

(C) That have a rated pressure ratio greater than 30 but less than 62.5, and a maximum rated output greater than 89 kilonewtons: Oxides of Nitrogen (7 + 2(rPR)) grams/kilonewtons rO.

(D) That have a rated pressure ratio greater than 30 but less than 62.5, and a maximum rated output greater than 26.7 kilonewtons but not greater than 89 kilonewtons: Oxides of Nitrogen: (42.71 + 1.4286(rPR) – 0.4013(rO) + 0.00642(rPR x rO)) grams/kilonewtons rO.

(E) That have a rated pressure ratio of 62.5 or more: Oxides of Nitrogen: (32 + 1.6 (rPR)) grams/kilonewtons rO.

* * * * *

[As amended by Amdt. 34-4, 74 FR 19127, April 28, 2009]

Revise Section 34.64 to read as follows:

§34.64 Sampling and analytical procedures for measuring gaseous exhaust emissions.

The system and procedure for sampling and measurement of gaseous emissions shall be as specified by in Appendices 3 and 5 to the International Civil Aviation Organization (ICAO) Annex 16, Environmental Protection, Volume II, Aircraft Engine Emissions, Second Edition, July 1993, effective July 26, 1993, through Amendment 3 (March 20, 1997). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This document can be obtained from the International Civil Aviation Organization (ICAO), Document Sales Unit, 999 University Street, Montreal, Quebec H3C 5H7, Canada, phone +1 514-954-8022, or <http://icaodsu.openface.ca/mainpage.ch2>. Copies can be reviewed at the FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts, 781-238-7101, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html

[Docket No. FAA-2009-0112, 74 FR 19128, April 28, 2009]

Revise Section 34.71 to read as follows:

§34.71 Compliance with gaseous emission standards.

Compliance with each gaseous emission standard by an aircraft engine shall be determined by comparing the pollutant level in grams/kilonewton/thrust/cycle or grams/kilowatt/cycle as calculated in §34.64 with the applicable emission standard under this part. An acceptable alternative to testing every engine is described in Appendix 6 to ICAO Annex 16, Environmental Protection, Volume II, Aircraft Engine Emissions, Second Edition, July 1993, effective July 26, 1993, including all amendments through Amendment 3 (March 20, 1997). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This document can be obtained from the International Civil Aviation Organization (ICAO), Document Sales Unit, 999 University Street, Montreal, Quebec H3C 5H7, Canada, phone +1 514-954-8022, or <http://icaodsu.openface.ca/mainpage.ch2>. Copies can be reviewed at the FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts, 781-238-7101, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html

Other methods of demonstrating compliance may be approved by the FAA Administrator with the concurrence of the Administrator of the EPA.

[Docket No. FAA-2009-0112, 74 FR 19128, April 28, 2009]

Revise Section 34.82 to read as follows:

§34.82 Sampling and analytical procedures for measuring smoke exhaust emissions.

The system and procedures for sampling and measurement of smoke emissions shall be as specified by Appendix 2 to ICAO Annex 16, Environmental Protection, Volume II, Aircraft Engine Emissions, Second Edition, July 1993, effective July 26, 1993,

through Amendment 3 (March 20, 1997). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This document can be obtained from the International Civil Aviation Organization (ICAO), Document Sales Unit, 999 University Street, Montreal, Quebec H3C 5H7, Canada, phone +1 514-954-8022, or <http://icaodsu.openface.ca/mainpage.ch2>. Copies can be reviewed at the FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts, 781-238-7101, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html

[Docket No. FAA-2009-0112, 74 FR 19128, April 28, 2009; as amended by Amdt. 34-4, 74 FR 26779, June 4, 2009]

Revise Section 34.89 to read as follows:

§34.89 Compliance with smoke emission standards.

Compliance with each smoke emission standard shall be determined by comparing the plot of SN as a function of power setting under the applicable emission standard under this part. The SN at every power setting must be such that there is a high degree of confidence that the standard will not be exceeded by any engine of the model being tested. An acceptable alternative to testing every engine is described in Appendix 6 to ICAO Annex 16, Environmental Protection, Volume II, Aircraft Engine Emissions, Second Edition, July 1993, effective July 16, 1993, including all amendments through Amendment 3 of March 20, 1997. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This document can be obtained from the International Civil Aviation Organization (ICAO), Document Sales Unit, 999 University Street, Montreal, Quebec H3C 5H7, Canada, phone +1 514-954-8022, or <http://icaodsu.openface.ca/mainpage.ch2>. Copies can be reviewed at the FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts, 781-238-7101, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html

Other methods of demonstrating compliance may be approved by the FAA Administrator with the concurrence of the Administrator of the EPA.

[Docket No. FAA-2009-0112, 74 FR 19128, April 28, 2009]

DECEMBER 16, 2008

Effective date: February 17, 2009

Part 1—Definitions and Abbreviations

Amend Section 1.1 by adding the definition of “National defense airspace” in alphabetical order to read as follows:

§1.1 General definitions.

* * * * *

National defense airspace means airspace established by a regulation prescribed, or an order issued under, 49 U.S.C. 40103(b)(3).

* * * * *

[As amended by Amdt. 1-63, 73 FR 76213, Dec. 16, 2008]

DECEMBER 4, 2008

Effective date: February 2, 2009

Part 1—Definitions and Abbreviations

Add the following definition of *Amateur rocket* in alphabetical order to Section 1.1 to read as follows:

§1.1 General definitions.

* * * * *

Amateur rocket means an unmanned rocket that:

(1) Is propelled by a motor or motors having a combined total impulse of 889,600 Newton-seconds (200,000 pound-seconds) or less; and

(2) Cannot reach an altitude greater than 150 kilometers (93.2 statute miles) above the earth's surface.

* * * * *

[As amended by Amdt. 1-62, 73 FR 73781, Dec. 4, 2008]

DECEMBER 2, 2008

Effective date: February 2, 2009

Part 91—General Operating and Flight Rules

Amend Section 91.609 by adding a new paragraph (k) to read:

§91.609 Flight data recorders and cockpit voice recorders.

* * * * *

(k) An aircraft operated under this part under deviation authority from part 125 of this chapter must comply with all of the applicable flight data recorder requirements of part 125 applicable to the aircraft, notwithstanding such deviation authority.

[As amended by Amdt. 91-304, 73 FR 73178, Dec. 2, 2008]

Part 125—Certification and Operations: Airplanes Having a Seating Capacity of 20 or More Passengers or a Maximum Payload Capacity of 6,000 Pounds or More

Amend Section 125.3 by adding a new paragraph (d) to read:

§125.3 Deviation authority.

* * * * *

(d) After February 2, 2012, no deviation authority from the flight data recorder requirements of this part will be granted. Any previously issued deviation from the flight data recorder requirements of this part is no longer valid.

[As amended by Amdt. 125-56, 73 FR 73179, Dec. 2, 2008]

Amend Section 125.226 by removing the word “and” after paragraph (a)(87); by removing the period after paragraph (a)(88) and adding a semicolon in its place; by adding new paragraphs (a)(89), (90), and (91), (e)(3), and (n); and by revising paragraph (f) to read as follows:

§125.226 Digital flight data recorders.

(a) * * *

- (89) Yaw damper status;
- (90) Yaw damper command; and
- (91) Standby rudder valve status.

* * * * *

(e) * * *

(3) In addition to the requirements of paragraphs (e)(1) and (e)(2) of this section, all Boeing 737 model airplanes must also comply with the requirements of paragraph (n) of this section, as applicable.

(f) For all turbine-engine-powered transport category airplanes manufactured after August 19, 2002—

(1) The parameters listed in paragraphs (a)(1) through (a)(88) of this section must be recorded within the ranges, accuracies, resolutions, and recording intervals specified in appendix M to this part.

(2) In addition to the requirements of paragraphs (f)(1) of this section, all Boeing 737 model airplanes must also comply with the requirements of paragraph (n) of this section.

* * * * *

(n) In addition to all other applicable requirements of this section, all Boeing 737 model airplanes manufactured after August 18, 2000, must record the parameters listed in paragraphs (a)(88) through (a)(91) of this section within the ranges, accuracies, resolutions, and recording intervals specified in Appendix M to this part. Compliance with this paragraph is required no later than February 2, 2011.

[As amended by Amdt. 125–56, 73 FR 73179, Dec. 2, 2008]

Amend Appendix E to part 125 by revising item 88, and adding items 89 through 91 and footnote 19 to read as follows:

Appendix E to Part 125—Airplane Flight Recorder Specifications

* * * * *

Parameter	Range	Accuracy (sensor input)	Seconds per sampling interval	Resolution	Remarks
*	*	*	*	*	*
88. All cockpit flight control input forces (control wheel, control column, rudder pedal) ^{18 19}	Full range Control wheel ±70 lbs. Control column ±85 lbs. Rudder pedal ±165 lbs.	±5%	1	0.3% of full range	For fly-by-wire flight control systems, where flight control surface position is a function of the displacement of the control input device only, it is not necessary to record this parameter. For airplanes that have a flight control break away capability that allows either pilot to operate the control independently, record both control force inputs. The control force inputs may be sampled alternately once per 2 seconds to produce the sampling interval of 1.
89. Yaw damper status	Discrete (on/off)	—	0.5	—	—
90. Yaw damper command	Full range	As installed	0.5	1% of full range	—
91. Standby rudder valve status	Discrete	—	0.5	—	—

¹⁸ For all aircraft manufactured on or after April 7, 2010, the seconds per sampling interval is 0.125. Each input must be recorded at this rate. Alternately sampling inputs (interleaving) to meet this sampling interval is prohibited.

¹⁹ For 737 model airplanes manufactured between August 19, 2000 and April 6, 2010: the seconds per sampling interval is 0.5 per control input; the remarks regarding the sampling rate do not apply; a single control wheel force transducer installed on the left cable control is acceptable provided the left and right control wheel positions also are recorded.

[As amended by Amdt. 125–56, 73 FR 73179, Dec. 2, 2008]

NOVEMBER 19, 2008

Effective date: December 19, 2008

Part 91—General Operating and Flight Rules

Amend Section 91.307 by revising paragraph (a) to read as follows:

§91.307 Parachutes and parachuting.

(a) No pilot of a civil aircraft may allow a parachute that is available for emergency use to be carried in that aircraft unless it is an approved type and has been packed by a certificated and appropriately rated parachute rigger—

(1) Within the preceding 180 days, if its canopy, shrouds, and harness are composed exclusively of nylon, rayon, or other similar synthetic fiber or materials that are substantially resistant to damage from mold, mildew, or other fungi and other rotting agents propagated in a moist environment; or

(2) Within the preceding 60 days, if any part of the parachute is composed of silk, pongee, or other natural fiber or materials not specified in paragraph (a)(1) of this section.

* * * * *

[As amended by Amdt. 91–305, 73 FR 69530, Nov. 19, 2008]

OCTOBER 28, 2008

Part 25—Airworthiness Standards: Transport Category Airplanes

Section 25.795 *Security considerations* is revised.

PART 25 IS AVAILABLE AS A FREE DOWNLOAD FROM ASA'S FAR/AIM UPDATE WEBPAGE:

WWW.ASA2FLY.COM/FARUPDATE

OCTOBER 24, 2008

Effective Date: December 23, 2008

Part 23—Airworthiness Standards: Normal, Utility, Acrobatic, and Commuter Category Airplanes

Revise Section 23.905 (d) to read as follows:

§23.905 Propellers.

* * * * *

(d) The propeller blade pitch control system must meet the requirements of §§35.21, 35.23, 35.42 and 35.43 of this chapter.

* * * * *

[As amended by Amdt. 23–59, 73 FR 63345, Oct. 24, 2008]

Revise Section 23.907 to read as follows:

§23.907 Propeller vibration and fatigue.

This section does not apply to fixed-pitch wood propellers of conventional design.

(a) The applicant must determine the magnitude of the propeller vibration stresses or loads, including any stress peaks and resonant conditions, throughout the operational envelope of the airplane by either:

(1) Measurement of stresses or loads through direct testing or analysis based on direct testing of the propeller on the airplane and engine installation for which approval is sought; or

(2) Comparison of the propeller to similar propellers installed on similar airplane installations for which these measurements have been made.

(b) The applicant must demonstrate by tests, analysis based on tests, or previous experience on similar designs that the propeller does not experience harmful effects of flutter throughout the operational envelope of the airplane.

(c) The applicant must perform an evaluation of the propeller to show that failure due to fatigue will be avoided throughout the operational life of the propeller using the fatigue and structural data obtained in accordance with part 35 of this chapter and the vibration data obtained from compliance with paragraph (a) of this section. For the purpose of this paragraph, the propeller includes the hub, blades, blade retention component and any other propeller component whose failure due to fatigue could be catastrophic to the airplane. This evaluation must include:

(1) The intended loading spectra including all reasonably foreseeable propeller vibration and cyclic load patterns, identified emergency conditions, allowable overspeeds and overtorques, and the effects of temperatures and humidity expected in service.

(2) The effects of airplane and propeller operating and airworthiness limitations.

[Docket No. FAA–2007–27310, 73 FR 63345, Oct. 24, 2008]

Part 33—Airworthiness Standards: Aircraft Engines

Revise Section 33.19 (b) to read as follows:

§33.19 Durability.

* * * * *

(b) Each component of the propeller blade pitch control system which is a part of the engine type design must meet the requirements of §§35.21, 35.23, 35.42 and 35.43 of this chapter.

[As amended by Amdt. 33–28, 73 FR 63346, Oct. 24, 2008]

Part 35—Airworthiness Standards: Propellers

Subpart A—General

Amend Section 35.1 by adding new paragraphs (c) and (d) to read:

§35.1 Applicability.

* * * * *

(c) An applicant is eligible for a propeller type certificate and changes to those certificates after demonstrating compliance with subparts A, B and C of this part. However, the propeller may not be installed on an airplane unless the applicant has shown compliance with either §23.907 or §25.907 of this chapter, as applicable, or compliance is not required for installation on that airplane.

(d) For the purposes of this part, the propeller consists of those components listed in the propeller type design, and the propeller system consists of the propeller and all the components necessary for its functioning, but not necessarily included in the propeller type design.

[As amended by Amdt. 35–8, 73 FR 63346, Oct. 24, 2008]

Add Section 35.2 to read as follows:

§35.2 Propeller configuration.

The applicant must provide a list of all the components, including references to the relevant drawings and software design data, that define the type design of the propeller to be approved under §21.31 of this chapter.

[Docket No. FAA–2007–27310, 73 FR 63346, Oct. 24, 2008]

Revise Section 35.3 to read as follows:

§35.3 Instructions for propeller installation and operation.

The applicant must provide instructions that are approved by the Administrator. Those approved instructions must contain:

(a) Instructions for installing the propeller, which:

(1) Include a description of the operational modes of the propeller control system and functional interface of the control system with the airplane and engine systems;

(2) Specify the physical and functional interfaces with the airplane, airplane equipment and engine;

(3) Define the limiting conditions on the interfaces from paragraph (a)(2) of this section;

(4) List the limitations established under §35.5;

(5) Define the hydraulic fluids approved for use with the propeller, including grade and specification, related operating pressure, and filtration levels; and

(6) State the assumptions made to comply with the requirements of this part.

(b) Instructions for operating the propeller which must specify all procedures necessary for operating the propeller within the limitations of the propeller type design.

[Docket No. FAA–2007–27310, 73 FR 63346, Oct. 24, 2008]

Revise Section 35.5 to read as follows:

§35.5 Propeller ratings and operating limitations.

(a) Propeller ratings and operating limitations must:

(1) Be established by the applicant and approved by the Administrator.

(2) Be included directly or by reference in the propeller type certificate data sheet, as specified in §21.41 of this chapter.

(3) Be based on the operating conditions demonstrated during the tests required by this part as well as any other information the Administrator requires as necessary for the safe operation of the propeller.

(b) Propeller ratings and operating limitations must be established for the following, as applicable:

(1) Power and rotational speed:

(i) For takeoff.

(ii) For maximum continuous.

(iii) If requested by the applicant, other ratings may also be established.

(2) Overspeed and overtorque limits.

[Docket No. FAA–2007–27310, 73 FR 63346, Oct. 24, 2008]

Add Section 35.7 to read as follows:

§35.7 Features and characteristics.

(a) The propeller may not have features or characteristics, revealed by any test or analysis or known to the applicant, that make it unsafe for the uses for which certification is requested.

(b) If a failure occurs during a certification test, the applicant must determine the cause and assess the effect on the airworthiness of the propeller. The applicant must make changes to the design and conduct additional tests that the Administrator finds necessary to establish the airworthiness of the propeller.

[Docket No. FAA–2007–27310, 73 FR 63346, Oct. 24, 2008]

Subpart B—Design and Construction

Remove and reserve Section 35.11.

§35.11 [Removed and Reserved]

[As amended by Amdt. 35–8, 73 FR 63346, Oct. 24, 2008]

Remove and reserve Section 35.13.

§35.13 [Removed and Reserved]

[As amended by Amdt. 35–8, 73 FR 63346, Oct. 24, 2008]

Revise Section 35.15 to read as follows:

§35.15 Safety analysis.

(a)(1) The applicant must analyze the propeller system to assess the likely consequences of all failures that can reasonably be expected to occur. This analysis will take into account, if applicable:

(i) The propeller system in a typical installation. When the analysis depends on representative components, assumed interfaces, or assumed installed conditions, the assumptions must be stated in the analysis.

(ii) Consequential secondary failures and dormant failures.

(iii) Multiple failures referred to in paragraph (d) of this section, or that result in the hazardous propeller effects defined in paragraph (g)(1) of this section.

(2) The applicant must summarize those failures that could result in major propeller effects or hazardous propeller effects defined in paragraph (g) of this section, and estimate the probability of occurrence of those effects.

(3) The applicant must show that hazardous propeller effects are not predicted to occur at a rate in excess of that defined as extremely remote (probability of 10^{-7} or less per propeller flight hour). Since the estimated probability for individual failures may be insufficiently precise to enable the applicant to assess the total rate for hazardous propeller effects, compliance may be shown by demonstrating that the probability of a hazardous propeller effect arising from an individual failure can be predicted to be not greater than 10^{-8} per propeller flight hour. In dealing with probabilities of this low order of magnitude, absolute proof is not possible and reliance must be placed on engineering judgment and previous experience combined with sound design and test philosophies.

(b) If significant doubt exists as to the effects of failures or likely combination of failures, the Administrator may require assumptions used in the analysis to be verified by test.

(c) The primary failures of certain single elements (for example, blades) cannot be sensibly estimated in numerical terms. If the failure of such elements is likely to result in hazardous propeller effects, then compliance may be shown by reliance on the prescribed integrity requirements of this part.

These instances must be stated in the safety analysis.

(d) If reliance is placed on a safety system to prevent a failure progressing to hazardous propeller effects, the possibility of a safety system failure in combination with a basic propeller failure must be included in the analysis. Such a safety system may include safety devices, instrumentation, early warning devices, maintenance checks, and other similar equipment or procedures. If items of the safety system are outside the control of the propeller manufacturer, the assumptions of the safety analysis with respect to the reliability of these parts must be clearly stated in the analysis and identified in the propeller installation and operation instructions required under §35.3.

(e) If the safety analysis depends on one or more of the following items, those items must be identified in the analysis and appropriately substantiated.

(1) Maintenance actions being carried out at stated intervals. This includes verifying that items that could fail in a latent manner are functioning properly. When necessary to prevent hazardous propeller effects, these maintenance actions and intervals must

be published in the instructions for continued airworthiness required under §35.4. Additionally, if errors in maintenance of the propeller system could lead to hazardous propeller effects, the appropriate maintenance procedures must be included in the relevant propeller manuals.

(2) Verification of the satisfactory functioning of safety or other devices at pre-flight or other stated periods. The details of this satisfactory functioning must be published in the appropriate manual.

(3) The provision of specific instrumentation not otherwise required. Such instrumentation must be published in the appropriate documentation.

(4) A fatigue assessment.

(f) If applicable, the safety analysis must include, but not be limited to, assessment of indicating equipment, manual and automatic controls, governors and propeller control systems, synchrophasers, synchronizers, and propeller thrust reversal systems.

(g) Unless otherwise approved by the Administrator and stated in the safety analysis, the following failure definitions apply to compliance with this part.

(1) The following are regarded as hazardous propeller effects:

(i) The development of excessive drag.

(ii) A significant thrust in the opposite direction to that commanded by the pilot.

(iii) The release of the propeller or any major portion of the propeller.

(iv) A failure that results in excessive unbalance.

(2) The following are regarded as major propeller effects for variable pitch propellers:

(i) An inability to feather the propeller for feathering propellers.

(ii) An inability to change propeller pitch when commanded.

(iii) A significant uncommanded change in pitch.

(iv) A significant uncontrollable torque or speed fluctuation.

[Docket No. FAA-2007-27310, 73 FR 63346, Oct. 24, 2008]

Revise Section 35.17 to read as follows:

§35.17 Materials and manufacturing methods.

(a) The suitability and durability of materials used in the propeller must:

(1) Be established on the basis of experience, tests, or both.

(2) Account for environmental conditions expected in service.

(b) All materials and manufacturing methods must conform to specifications acceptable to the Administrator.

(c) The design values of properties of materials must be suitably related to the most adverse properties stated in the material specification for applicable conditions expected in service.

[Docket No. FAA-2007-27310, 73 FR 63347, Oct. 24, 2008]

Revise Section 35.21 to read as follows:

§35.21 Variable and reversible pitch propellers.

(a) No single failure or malfunction in the propeller system will result in unintended travel of the propeller blades to a position below the in-flight low-pitch position. The extent of any intended travel below the in-flight low-pitch position must be documented by the applicant in the appropriate manuals. Failure of structural elements need not be considered if the occurrence of such a failure is shown to be extremely remote under §35.15.

(b) For propellers incorporating a method to select blade pitch below the in-flight low pitch position, provisions must be made to sense and indicate to the flight crew that the propeller blades are below that position by an amount defined in the installation manual. The method for sensing and indicating the propeller blade

pitch position must be such that its failure does not affect the control of the propeller.

[Docket No. FAA-2007-27310, 73 FR 63347, Oct. 24, 2008]

Add Section 35.22 to read as follows:

§35.22 Feathering propellers.

(a) Feathering propellers are intended to feather from all flight conditions, taking into account expected wear and leakage. Any feathering and unfeathering limitations must be documented in the appropriate manuals.

(b) Propeller pitch control systems that use engine oil to feather must incorporate a method to allow the propeller to feather if the engine oil system fails.

(c) Feathering propellers must be designed to be capable of unfeathering after the propeller system has stabilized to the minimum declared outside air temperature.

[Docket No. FAA-2007-27310, 73 FR 63347, Oct. 24, 2008]

Revise Section 35.23 to read as follows:

§35.23 Propeller control system.

The requirements of this section apply to any system or component that controls, limits or monitors propeller functions.

(a) The propeller control system must be designed, constructed and validated to show that:

(1) The propeller control system, operating in normal and alternative operating modes and in transition between operating modes, performs the functions defined by the applicant throughout the declared operating conditions and flight envelope.

(2) The propeller control system functionality is not adversely affected by the declared environmental conditions, including temperature, electromagnetic interference (EMI), high intensity radiated fields (HIRF) and lightning. The environmental limits to which the system has been satisfactorily validated must be documented in the appropriate propeller manuals.

(3) A method is provided to indicate that an operating mode change has occurred if flight crew action is required. In such an event, operating instructions must be provided in the appropriate manuals.

(b) The propeller control system must be designed and constructed so that, in addition to compliance with §35.15:

(1) No single failure or malfunction of electrical or electronic components in the control system results in a hazardous propeller effect.

(2) Failures or malfunctions directly affecting the propeller control system in a typical airplane, such as structural failures of attachments to the control, fire, or overheat, do not lead to a hazardous propeller effect.

(3) The loss of normal propeller pitch control does not cause a hazardous propeller effect under the intended operating conditions.

(4) The failure or corruption of data or signals shared across propellers does not cause a hazardous propeller effect.

(c) Electronic propeller control system imbedded software must be designed and implemented by a method approved by the Administrator that is consistent with the criticality of the performed functions and that minimizes the existence of software errors.

(d) The propeller control system must be designed and constructed so that the failure or corruption of airplane-supplied data does not result in hazardous propeller effects.

(e) The propeller control system must be designed and constructed so that the loss, interruption or abnormal characteristic of airplane-supplied electrical power does not result in hazardous

propeller effects. The power quality requirements must be described in the appropriate manuals.

[Docket No. FAA-2007-27310, 73 FR 63347, Oct. 24, 2008]

Add Section 35.24 to read as follows:

§35.24 Strength.

The maximum stresses developed in the propeller may not exceed values acceptable to the Administrator considering the particular form of construction and the most severe operating conditions.

[Docket No. FAA-2007-27310, 73 FR 63348, Oct. 24, 2008]

Subpart C—Type Substantiation

Remove and reserve Section 35.31.

§35.31 [Removed and Reserved]

[As amended by Amdt. 35-8, 73 FR 63348, Oct. 24, 2008]

Revise Section 35.33 to read as follows:

§35.33 General.

(a) Each applicant must furnish test article(s) and suitable testing facilities, including equipment and competent personnel, and conduct the required tests in accordance with part 21 of this chapter.

(b) All automatic controls and safety systems must be in operation unless it is accepted by the Administrator as impossible or not required because of the nature of the test. If needed for substantiation, the applicant may test a different propeller configuration if this does not constitute a less severe test.

(c) Any systems or components that cannot be adequately substantiated by the applicant to the requirements of this part are required to undergo additional tests or analysis to demonstrate that the systems or components are able to perform their intended functions in all declared environmental and operating conditions.

[Docket No. FAA-2007-27310, 73 FR 63348, Oct. 24, 2008]

Add Section 35.34 to read as follows:

§35.34 Inspections, adjustments and repairs.

(a) Before and after conducting the tests prescribed in this part, the test article must be subjected to an inspection, and a record must be made of all the relevant parameters, calibrations and settings.

(b) During all tests, only servicing and minor repairs are permitted. If major repairs or part replacement is required, the Administrator must approve the repair or part replacement prior to implementation and may require additional testing. Any unscheduled repair or action on the test article must be recorded and reported.

[Docket No. FAA-2007-27310, 73 FR 63348, Oct. 24, 2008]

Revise Section 35.35 to read as follows:

§35.35 Centrifugal load tests.

The applicant must demonstrate that a propeller complies with paragraphs (a), (b) and (c) of this section without evidence of failure, malfunction, or permanent deformation that would result in a major or hazardous propeller effect. When the propeller could be sensitive to environmental degradation in service, this must be considered. This section does not apply to fixed-pitch wood or fixed-pitch metal propellers of conventional design.

(a) The hub, blade retention system, and counterweights must be tested for a period of one hour to a load equivalent to twice the

maximum centrifugal load to which the propeller would be subjected during operation at the maximum rated rotational speed.

(b) Blade features associated with transitions to the retention system (for example, a composite blade bonded to a metallic retention) must be tested either during the test of paragraph (a) of this section or in a separate component test for a period of one hour to a load equivalent to twice the maximum centrifugal load to which the propeller would be subjected during operation at the maximum rated rotational speed.

(c) Components used with or attached to the propeller (for example, spinners, de-icing equipment, and blade erosion shields) must be subjected to a load equivalent to 159 percent of the maximum centrifugal load to which the component would be subjected during operation at the maximum rated rotational speed. This must be performed by either:

- (1) Testing at the required load for a period of 30 minutes; or
- (2) Analysis based on test.

[Docket No. FAA-2007-27310, 73 FR 63348, Oct. 24, 2008]

Add Section 35.36 to read as follows:

§35.36 Bird impact.

The applicant must demonstrate, by tests or analysis based on tests or experience on similar designs, that the propeller can withstand the impact of a 4-pound bird at the critical location(s) and critical flight condition(s) of a typical installation without causing a major or hazardous propeller effect. This section does not apply to fixed-pitch wood propellers of conventional design.

[Docket No. FAA-2007-27310, 73 FR 63348, Oct. 24, 2008]

Revise Section 35.37 to read as follows:

§35.37 Fatigue limits and evaluation.

This section does not apply to fixed-pitch wood propellers of conventional design.

(a) Fatigue limits must be established by tests, or analysis based on tests, for propeller:

- (1) Hubs.
- (2) Blades.
- (3) Blade retention components.

(4) Components which are affected by fatigue loads and which are shown under §35.15 to have a fatigue failure mode leading to hazardous propeller effects.

(b) The fatigue limits must take into account:

- (1) All known and reasonably foreseeable vibration and cyclic load patterns that are expected in service; and
- (2) Expected service deterioration, variations in material properties, manufacturing variations, and environmental effects.

(c) A fatigue evaluation of the propeller must be conducted to show that hazardous propeller effects due to fatigue will be avoided throughout the intended operational life of the propeller on either:

- (1) The intended airplane by complying with §§23.907 or 25.907 of this chapter, as applicable; or
- (2) A typical airplane.

[Docket No. FAA-2007-27310, 73 FR 63348, Oct. 24, 2008]

Add Section 35.38 to read as follows:

§35.38 Lightning strike.

The applicant must demonstrate, by tests, analysis based on tests, or experience on similar designs, that the propeller can withstand a lightning strike without causing a major or hazardous propeller effect. The limit to which the propeller has been qualified

must be documented in the appropriate manuals. This section does not apply to fixed-pitch wood propellers of conventional design.

[Docket No. FAA–2007–27310, 73 FR 63348, Oct. 24, 2008]

Revise Section 35.39 to read as follows:

§35.39 Endurance test.

Endurance tests on the propeller system must be made on a representative engine in accordance with paragraph (a) or (b) of this section, as applicable, without evidence of failure or malfunction.

(a) Fixed-pitch and ground adjustable-pitch propellers must be subjected to one of the following tests:

(1) A 50-hour flight test in level flight or in climb. The propeller must be operated at takeoff power and rated rotational speed during at least five hours of this flight test, and at not less than 90 percent of the rated rotational speed for the remainder of the 50 hours.

(2) A 50-hour ground test at takeoff power and rated rotational speed.

(b) Variable-pitch propellers must be subjected to one of the following tests:

(1) A 110-hour endurance test that must include the following conditions:

(i) Five hours at takeoff power and rotational speed and thirty 10-minute cycles composed of:

(A) Acceleration from idle,

(B) Five minutes at takeoff power and rotational speed,

(C) Deceleration, and

(D) Five minutes at idle.

(ii) Fifty hours at maximum continuous power and rotational speed,

(iii) Fifty hours, consisting of ten 5-hour cycles composed of:

(A) Five accelerations and decelerations between idle and takeoff power and rotational speed,

(B) Four and one half hours at approximately even incremental conditions from idle up to, but not including, maximum continuous power and rotational speed, and

(C) Thirty minutes at idle.

(2) The operation of the propeller throughout the engine endurance tests prescribed in part 33 of this chapter.

(c) An analysis based on tests of propellers of similar design may be used in place of the tests of paragraphs (a) and (b) of this section.

[Docket No. FAA–2007–27310, 73 FR 63348, Oct. 24, 2008]

Add Section 35.40 to read as follows:

§35.40 Functional test.

The variable-pitch propeller system must be subjected to the applicable functional tests of this section. The same propeller system used in the endurance test (§35.39) must be used in the functional tests and must be driven by a representative engine on a test stand or on an airplane. The propeller must complete these tests without evidence of failure or malfunction. This test may be combined with the endurance test for accumulation of cycles.

(a) **Manually-controllable propellers.** Five hundred representative flight cycles must be made across the range of pitch and rotational speed.

(b) **Governing propellers.** Fifteen hundred complete cycles must be made across the range of pitch and rotational speed.

(c) **Feathering propellers.** Fifty cycles of feather and unfeather operation must be made.

(d) **Reversible-pitch propellers.** Two hundred complete cycles of control must be made from lowest normal pitch to maximum reverse pitch. During each cycle, the propeller must run for 30 seconds at the maximum power and rotational speed selected by the applicant for maximum reverse pitch.

(e) An analysis based on tests of propellers of similar design may be used in place of the tests of this section.

[Docket No. FAA–2007–27310, 73 FR 63349, Oct. 24, 2008]

Revise Sections 35.41, 35.42, and 35.43 to read as follows:

§35.41 Overspeed and overtorque.

(a) When the applicant seeks approval of a transient maximum propeller overspeed, the applicant must demonstrate that the propeller is capable of further operation without maintenance action at the maximum propeller overspeed condition. This may be accomplished by:

(1) Performance of 20 runs, each of 30 seconds duration, at the maximum propeller overspeed condition; or

(2) Analysis based on test or service experience.

(b) When the applicant seeks approval of a transient maximum propeller overtorque, the applicant must demonstrate that the propeller is capable of further operation without maintenance action at the maximum propeller overtorque condition. This may be accomplished by:

(1) Performance of 20 runs, each of 30 seconds duration, at the maximum propeller overtorque condition; or

(2) Analysis based on test or service experience.

[Docket No. FAA–2007–27310, 73 FR 63349, Oct. 24, 2008]

§35.42 Components of the propeller control system.

The applicant must demonstrate by tests, analysis based on tests, or service experience on similar components, that each propeller blade pitch control system component, including governors, pitch change assemblies, pitch locks, mechanical stops, and feathering system components, can withstand cyclic operation that simulates the normal load and pitch change travel to which the component would be subjected during the initially declared overhaul period or during a minimum of 1,000 hours of typical operation in service.

[Docket No. FAA–2007–27310, 73 FR 63349, Oct. 24, 2008]

§35.43 Propeller hydraulic components.

Applicants must show by test, validated analysis, or both, that propeller components that contain hydraulic pressure and whose structural failure or leakage from a structural failure could cause a hazardous propeller effect demonstrate structural integrity by:

(a) A proof pressure test to 1.5 times the maximum operating pressure for one minute without permanent deformation or leakage that would prevent performance of the intended function.

(b) A burst pressure test to 2.0 times the maximum operating pressure for one minute without failure. Leakage is permitted and seals may be excluded from the test.

[Docket No. FAA–2007–27310, 73 FR 63349, Oct. 24, 2008]

Remove and reserve Section 35.45.

Section 35.45 [Removed and Reserved]

[As amended by Amdt. 35–8, 73 FR 63349, Oct. 24, 2008]

Remove and reserve Section 35.47.

§35.47 [Removed and Reserved]

[As amended by Amdt. 35–8, 73 FR 63349, Oct. 24, 2008]

SEPTEMBER 26, 2008

Part 47—Aircraft Registration

EDITORIAL NOTE: THE FAA IS CORRECTING A PREVIOUS RULE OF JANUARY 3, 2005 THAT REVISED §47.35. BECAUSE ASA ALREADY MADE THIS CORRECTION, CHANGES TO ASA'S 2009 FAR-AMT BOOK ARE NOT NECESSARY.

[As amended at 73 FR 55722, Sept. 26, 2008]

SEPTEMBER 25, 2008

Effective date: November 24, 2008

Part 33—Airworthiness Standards: Aircraft Engines

Add Section 33.64 to Subpart E to read as follows:

§33.64 Pressurized engine static parts.

(a) **Strength.** The applicant must establish by test, validated analysis, or a combination of both, that all static parts subject to significant gas or liquid pressure loads for a stabilized period of one minute will not:

(1) Exhibit permanent distortion beyond serviceable limits or exhibit leakage that could create a hazardous condition when subjected to the greater of the following pressures:

- (i) 1.1 times the maximum working pressure;
- (ii) 1.33 times the normal working pressure; or
- (iii) 35 kPa (5 p.s.i.) above the normal working pressure.

(2) Exhibit fracture or burst when subjected to the greater of the following pressures:

- (i) 1.15 times the maximum possible pressure;
- (ii) 1.5 times the maximum working pressure; or
- (iii) 35 kPa (5 p.s.i.) above the maximum possible pressure.

(b) Compliance with this section must take into account:

- (1) The operating temperature of the part;
- (2) Any other significant static loads in addition to pressure loads;
- (3) Minimum properties representative of both the material and the processes used in the construction of the part; and
- (4) Any adverse geometry conditions allowed by the type design.

[Docket No. FAA-2007-28501, 73 FR 55437, Sept. 25, 2008]

Amend Section 33.71 by revising paragraph (c)(9) to read:

§33.71 Lubrication system.

* * * * *

(c) * * *

(9) Each unpressurized oil tank may not leak when subjected to a maximum operating temperature and an internal pressure of 5 p.s.i., and each pressurized oil tank must meet the requirements of §33.64.

* * * * *

[As amended by Amdt. 33-27, 73 FR 55437, Sept. 25, 2008]

Amend Section 33.91 by revising paragraph (c) to read as follows:

§33.91 Engine component tests.

* * * * *

(c) Each unpressurized hydraulic fluid tank may not fail or leak when subjected to a maximum operating temperature and an internal pressure of 5 p.s.i., and each pressurized hydraulic fluid tank must meet the requirements of §33.64.

* * * * *

[As amended by Amdt. 33-27, 73 FR 55437, Sept. 25, 2008]

AUGUST 19, 2008

Effective Date: October 20, 2008

Part 33—Airworthiness Standards: Aircraft Engines

Amend Section 33.5 by adding new paragraphs (a)(4), (a)(5), (a)(6), and (b)(5), to read as follows:

§33.5 Instruction manual for installing and operating the engine.

* * * * *

(a) * * *

(4) A definition of the physical and functional interfaces with the aircraft and aircraft equipment, including the propeller when applicable.

(5) Where an engine system relies on components that are not part of the engine type design, the interface conditions and reliability requirements for those components upon which engine type certification is based must be specified in the engine installation instructions directly or by reference to appropriate documentation.

(6) A list of the instruments necessary for control of the engine, including the overall limits of accuracy and transient response required of such instruments for control of the operation of the engine, must also be stated so that the suitability of the instruments as installed may be assessed.

(b) * * *

(5) A description of the primary and all alternate modes, and any back-up system, together with any associated limitations, of the engine control system and its interface with the aircraft systems, including the propeller when applicable.

* * * * *

[As amended by Amdt. 33-26, 73 FR 48284, Aug. 19, 2008]

Amend Section 33.7 by adding new paragraph (d) to read:

§33.7 Engine ratings and operating limitations.

* * * * *

(d) In determining the engine performance and operating limitations, the overall limits of accuracy of the engine control system and of the necessary instrumentation as defined in §33.5(a)(6) must be taken into account.

[As amended by Amdt. 33-26, 73 FR 48284, Aug. 19, 2008]

Amend Section 33.27 by revising paragraph (b) to read as follows:

§33.27 Turbine, compressor, fan, and turbosupercharger rotors.

* * * * *

(b) The design and functioning of engine systems, instruments, and other methods, not covered under §33.28 must give reasonable assurance that those engine operating limitations that affect turbine, compressor, fan, and turbosupercharger rotor structural integrity will not be exceeded in service.

* * * * *

[As amended by Amdt. 33-26, 73 FR 48284, Aug. 19, 2008]

Revise Section 33.28 to read as follows:

§33.28 Engine control systems.

(a) **Applicability.** These requirements are applicable to any system or device that is part of engine type design, that controls, limits, or monitors engine operation, and is necessary for the continued airworthiness of the engine.

(b) **Validation.**

(1) *Functional aspects.* The applicant must substantiate by tests, analysis, or a combination thereof, that the engine control system performs the intended functions in a manner which:

(i) Enables selected values of relevant control parameters to be maintained and the engine kept within the approved operating limits over changing atmospheric conditions in the declared flight envelope;

(ii) Complies with the operability requirements of §§33.51, 33.65 and 33.73, as appropriate, under all likely system inputs and allowable engine power or thrust demands, unless it can be demonstrated that failure of the control function results in a non-dispatchable condition in the intended application;

(iii) Allows modulation of engine power or thrust with adequate sensitivity over the declared range of engine operating conditions; and

(iv) Does not create unacceptable power or thrust oscillations.

(2) *Environmental limits.* The applicant must demonstrate, when complying with §§33.53 or 33.91, that the engine control system functionality will not be adversely affected by declared environmental conditions, including electromagnetic interference (EMI), High Intensity Radiated Fields (HIRF), and lightning. The limits to which the system has been qualified must be documented in the engine installation instructions.

(c) Control transitions.

(1) The applicant must demonstrate that, when fault or failure results in a change from one control mode to another, from one channel to another, or from the primary system to the back-up system, the change occurs so that:

(i) The engine does not exceed any of its operating limitations;

(ii) The engine does not surge, stall, or experience unacceptable thrust or power changes or oscillations or other unacceptable characteristics; and

(iii) There is a means to alert the flight crew if the crew is required to initiate, respond to, or be aware of the control mode change. The means to alert the crew must be described in the engine installation instructions, and the crew action must be described in the engine operating instructions;

(2) The magnitude of any change in thrust or power and the associated transition time must be identified and described in the engine installation instructions and the engine operating instructions.

(d) Engine control system failures. The applicant must design and construct the engine control system so that:

(1) The rate for Loss of Thrust (or Power) Control (LOTC/LOPC) events, consistent with the safety objective associated with the intended application can be achieved;

(2) In the full-up configuration, the system is single fault tolerant, as determined by the Administrator, for electrical or electronic failures with respect to LOTC/LOPC events;

(3) Single failures of engine control system components do not result in a hazardous engine effect; and

(4) Foreseeable failures or malfunctions leading to local events in the intended aircraft installation, such as fire, overheat, or failures leading to damage to engine control system components, do not result in a hazardous engine effect due to engine control system failures or malfunctions.

(e) System safety assessment. When complying with this section and §33.75, the applicant must complete a System Safety Assessment for the engine control system. This assessment must identify faults or failures that result in a change in thrust or power, transmission of erroneous data, or an effect on engine operability producing a surge or stall together with the predicted frequency of occurrence of these faults or failures.

(f) Protection systems.

(1) The design and functioning of engine control devices and systems, together with engine instruments and operating and maintenance instructions, must provide reasonable assurance that those engine operating limitations that affect turbine, compressor, fan, and turbosupercharger rotor structural integrity will not be exceeded in service.

(2) When electronic overspeed protection systems are provided, the design must include a means for testing, at least once per engine start/stop cycle, to establish the availability of the protection function. The means must be such that a complete test of the system can be achieved in the minimum number of cycles. If the test is not fully automatic, the requirement for a manual test must be contained in the engine instructions for operation.

(3) When overspeed protection is provided through hydromechanical or mechanical means, the applicant must demonstrate by test or other acceptable means that the overspeed function remains available between inspection and maintenance periods.

(g) Software. The applicant must design, implement, and verify all associated software to minimize the existence of errors by using a method, approved by the FAA, consistent with the criticality of the performed functions.

(h) Aircraft-supplied data. Single failures leading to loss, interruption or corruption of aircraft-supplied data (other than thrust or power command signals from the aircraft), or data shared between engines must:

(1) Not result in a hazardous engine effect for any engine; and

(2) Be detected and accommodated. The accommodation strategy must not result in an unacceptable change in thrust or power or an unacceptable change in engine operating and starting characteristics. The applicant must evaluate and document in the engine installation instructions the effects of these failures on engine power or thrust, engine operability, and starting characteristics throughout the flight envelope.

(i) Aircraft-supplied electrical power.

(1) The applicant must design the engine control system so that the loss, malfunction, or interruption of electrical power supplied from the aircraft to the engine control system will not result in any of the following:

(i) A hazardous engine effect, or

(ii) The unacceptable transmission of erroneous data.

(2) When an engine dedicated power source is required for compliance with paragraph (i)(1) of this section, its capacity should provide sufficient margin to account for engine operation below idle where the engine control system is designed and expected to recover engine operation automatically.

(3) The applicant must identify and declare the need for, and the characteristics of, any electrical power supplied from the aircraft to the engine control system for starting and operating the engine, including transient and steady state voltage limits, in the engine instructions for installation.

(4) Low voltage transients outside the power supply voltage limitations declared in paragraph (i)(3) of this section must meet the requirements of paragraph (i)(1) of this section. The engine control system must be capable of resuming normal operation when aircraft-supplied power returns to within the declared limits.

(j) Air pressure signal. The applicant must consider the effects of blockage or leakage of the signal lines on the engine control system as part of the System Safety Assessment of paragraph (e) of this section and must adopt the appropriate design precautions.

(k) Automatic availability and control of engine power for 30-second OEI rating. Rotorcraft engines having a 30-second OEI rating must incorporate a means, or a provision for a means,

for automatic availability and automatic control of the 30-second OEI power within its operating limitations.

(l) **Engine shut down means.** Means must be provided for shutting down the engine rapidly.

(m) **Programmable logic devices.** The development of programmable logic devices using digital logic or other complex design technologies must provide a level of assurance for the encoded logic commensurate with the hazard associated with the failure or malfunction of the systems in which the devices are located. The applicant must provide evidence that the development of these devices has been done by using a method, approved by the FAA, that is consistent with the criticality of the performed function.

[Docket No. FAA-2007-27311, 73 FR 48284, Aug. 19, 2008]

Amend Section 33.29 by adding new paragraphs (e) through (h) to read as follows:

§33.29 Instrument connection.

* * * * *

(e) The applicant must make provision for the installation of instrumentation necessary to ensure operation in compliance with engine operating limitations. Where, in presenting the safety analysis, or complying with any other requirement, dependence is placed on instrumentation that is not otherwise mandatory in the assumed aircraft installation, then the applicant must specify this instrumentation in the engine installation instructions and declare it mandatory in the engine approval documentation.

(f) As part of the System Safety Assessment of §33.28(e), the applicant must assess the possibility and subsequent effect of incorrect fit of instruments, sensors, or connectors. Where necessary, the applicant must take design precautions to prevent incorrect configuration of the system.

(g) The sensors, together with associated wiring and signal conditioning, must be segregated, electrically and physically, to the extent necessary to ensure that the probability of a fault propagating from instrumentation and monitoring functions to control functions, or vice versa, is consistent with the failure effect of the fault.

(h) The applicant must provide instrumentation enabling the flight crew to monitor the functioning of the turbine cooling system unless appropriate inspections are published in the relevant manuals and evidence shows that:

- (1) Other existing instrumentation provides adequate warning of failure or impending failure;
- (2) Failure of the cooling system would not lead to hazardous engine effects before detection; or
- (3) The probability of failure of the cooling system is extremely remote.

[As amended by Amdt. 33-26, 73 FR 48285, Aug. 19, 2008]

Amend Section 33.53 by revising the section heading and paragraph (a) to read as follows:

§33.53 Engine system and component tests.

(a) For those systems and components that cannot be adequately substantiated in accordance with endurance testing of §33.49, the applicant must conduct additional tests to demonstrate that systems or components are able to perform the intended functions in all declared environmental and operating conditions.

* * * * *

[As amended by Amdt. 33-26, 73 FR 48285, Aug. 19, 2008]

Remove paragraph (d) from Section 33.67.

§33.67 Fuel system.

[As amended by Amdt. 33-26, 73 FR 48285, Aug. 19, 2008]

Amend Section 33.88 by revising paragraph (b) to read as follows:

§33.88 Engine overtemperature test.

* * * * *

(b) In addition to the test requirements in paragraph (a) of this section, each engine for which 30-second OEI and 2-minute OEI ratings are desired, that incorporates a means for automatic temperature control within its operating limitations in accordance with §33.28(k), must run for a period of 4 minutes at the maximum power-on rpm with the gas temperature at least 35°F (19°C) higher than the maximum operating limit at 30-second OEI rating. Following this run, the turbine assembly may exhibit distress beyond the limits for an overtemperature condition provided the engine is shown by analysis or test, as found necessary by the FAA, to maintain the integrity of the turbine assembly.

* * * * *

[As amended by Amdt. 33-26, 73 FR 48285, Aug. 19, 2008]

Amend Section 33.91 by revising the section heading and paragraph (a) to read as follows:

§33.91 Engine system and component tests.

(a) For those systems or components that cannot be adequately substantiated in accordance with endurance testing of §33.87, the applicant must conduct additional tests to demonstrate that the systems or components are able to perform the intended functions in all declared environmental and operating conditions.

* * * * *

[As amended by Amdt. 33-26, 73 FR 48285, Aug. 19, 2008]

AUGUST 18, 2008

Effective date: October 17, 2008

Part 1—Definitions and Abbreviations

Amend Section 1.1 by revising the following definitions:

§1.1 General definitions.

* * * * *

Rated 30-second OEI Power, with respect to rotorcraft turbine engines, means the approved brake horsepower developed under static conditions at specified altitudes and temperatures within the operating limitations established for the engine under part 33 of this chapter, for continuation of one flight operation after the failure or shutdown of one engine in multiengine rotorcraft, for up to three periods of use no longer than 30 seconds each in any one flight, and followed by mandatory inspection and prescribed maintenance action.

Rated 2-minute OEI Power, with respect to rotorcraft turbine engines, means the approved brake horsepower developed under static conditions at specified altitudes and temperatures within the operating limitations established for the engine under part 33 of this chapter, for continuation of one flight operation after the failure or shutdown of one engine in multiengine rotorcraft, for up to three periods of use no longer than 2 minutes each in any one flight, and followed by mandatory inspection and prescribed maintenance action.

Rated continuous OEI power, with respect to rotorcraft turbine engines, means the approved brake horsepower developed under

static conditions at specified altitudes and temperatures within the operating limitations established for the engine under part 33 of this chapter, and limited in use to the time required to complete the flight after the failure or shutdown of one engine of a multi-engine rotorcraft.

* * * * *

Rated 30-minute OEI power, with respect to rotorcraft turbine engines, means the approved brake horsepower developed under static conditions at specified altitudes and temperatures within the operating limitations established for the engine under part 33 of this chapter, and limited in use to one period of use no longer than 30 minutes after the failure or shutdown of one engine of a multi-engine rotorcraft.

Rated 2-1/2-minute OEI power, with respect to rotorcraft turbine engines, means the approved brake horsepower developed under static conditions at specified altitudes and temperatures within the operating limitations established for the engine under part 33 of this chapter for periods of use no longer than 2-1/2 minutes each after the failure or shutdown of one engine of a multi-engine rotorcraft.

* * * * *

[As amended at 73 FR 48123, Aug. 18, 2008]

Part 33—Airworthiness Standards: Aircraft Engines

Amend Section 33.5 to add a new paragraph (b)(4) to read:

§33.5 Instruction manual for installing and operating the engine.

* * * * *

(b) * * *

(4) For rotorcraft engines having one or more OEI ratings, applicants must provide data on engine performance characteristics and variability to enable the aircraft manufacturer to establish aircraft power assurance procedures.

* * * * *

[As amended by Amdt. 33–25, 73 FR 48123, Aug. 18, 2008]

Amend Section 33.29 by revising paragraph (c) and adding paragraph (d) to read as follows:

§33.29 Instrument connection.

* * * * *

(c) Each rotorcraft turbine engine having a 30-second OEI rating and a 2-minute OEI rating must have a means or a provision for a means to:

(1) Alert the pilot when the engine is at the 30-second OEI and the 2-minute OEI power levels, when the event begins, and when the time interval expires;

(2) Automatically record each usage and duration of power at the 30-second OEI and 2-minute OEI levels;

(3) Alert maintenance personnel in a positive manner that the engine has been operated at either or both of the 30-second and 2-minute OEI power levels, and permit retrieval of the recorded data; and

(4) Enable routine verification of the proper operation of the above means.

(d) The means, or the provision for a means, of paragraphs (c)(2) and (c)(3) of this section must not be capable of being reset in flight.

[As amended by Amdt. 33–25, 73 FR 48123, Aug. 18, 2008]

Revise Section 33.67(d) to read as follows:

Editorial note: Subparagraph (d) was removed by the FAA on August 19, 2008.

§33.67 Fuel system.

* * * * *

(d) Rotorcraft engines having a 30-second OEI rating must incorporate a means, or a provision for a means, for automatic availability and automatic control of the 30-second OEI power within its operating limitations.

[As amended by Amdt. 33–25, 73 FR 48123, Aug. 18, 2008]

Amend Section 33.87 by:

A. Redesignating paragraphs (c)(2) and paragraphs (c)(4) through (c)(6) as paragraphs (c)(4) through (c)(7);

B. Adding new paragraph (c)(2); and

C. Revising paragraphs (a)(5), (a)(6), (c)(3), newly redesignated paragraphs (c)(4) through (c)(7), (f) introductory text, (f)(4) and (f)(8) to read as follows:

§33.87 Endurance test.

(a) * * *

(5) Maximum air bleed for engine and aircraft services must be used during at least one-fifth of the runs, except for the test required under paragraph (f) of this section, provided the validity of the test is not compromised. However, for these runs, the power or thrust or the rotor shaft rotational speed may be less than 100 percent of the value associated with the particular operation being tested if the FAA finds that the validity of the endurance test is not compromised.

(6) Each accessory drive and mounting attachment must be loaded in accordance with paragraphs (a)(6)(i) and (ii) of this section, except as permitted by paragraph (a)(6)(iii) of this section for the test required under paragraph (f) of this section.

(i) The load imposed by each accessory used only for aircraft service must be the limit load specified by the applicant for the engine drive and attachment point during rated maximum continuous power or thrust and higher output.

(ii) The endurance test of any accessory drive and mounting attachment under load may be accomplished on a separate rig if the validity of the test is confirmed by an approved analysis.

(iii) The applicant is not required to load the accessory drives and mounting attachments when running the tests under paragraphs (f)(1) through (f)(8) of this section if the applicant can substantiate that there is no significant effect on the durability of any accessory drive or engine component. However, the applicant must add the equivalent engine output power extraction from the power turbine rotor assembly to the engine shaft output.

* * * * *

(c) * * *

(2) *Rated maximum continuous and takeoff power.* Thirty minutes at—

(i) Rated maximum continuous power during fifteen of the twenty-five 6-hour endurance test cycles; and

(ii) Rated takeoff power during ten of the twenty-five 6-hour endurance test cycles.

(3) *Rated maximum continuous power.* One hour at rated maximum continuous power.

(4) *Rated 30-minute OEI power.* Thirty minutes at rated 30-minute OEI power.

(5) *Incremental cruise power.* Two hours and 30 minutes at the successive power lever positions corresponding with not less than 15 approximately equal speed and time increments between max-

imum continuous engine rotational speed and ground or minimum idle rotational speed. For engines operating at constant speed, power may be varied in place of speed. If there are significant peak vibrations anywhere between ground idle and maximum continuous conditions, the number of increments chosen must be changed to increase the amount of running conducted while subject to peak vibrations up to not more than 50 percent of the total time spent in incremental running.

(6) *Acceleration and deceleration runs.* Thirty minutes of accelerations and decelerations, consisting of six cycles from idling power to rated takeoff power and maintained at the takeoff power lever position for 30 seconds and at the idling power lever position for approximately 4-1/2 minutes. In complying with this paragraph, the power control lever must be moved from one extreme position to the other in not more than one second. If, however, different regimes of control operations are incorporated that necessitate scheduling of the power control lever motion from one extreme position to the other, then a longer period of time is acceptable, but not more than two seconds.

(7) *Starts.* One hundred starts, of which 25 starts must be preceded by at least a two-hour engine shutdown. There must be at least 10 false engine starts, pausing for the applicant's specified minimum fuel drainage time, before attempting a normal start. There must be at least 10 normal restarts not more than 15 minutes after engine shutdown. The remaining starts may be made after completing the 150 hours of endurance testing.

* * * * *

(f) *Rotorcraft Engines for which 30-second OEI and 2-minute OEI ratings are desired.* For each rotorcraft engine for which 30-second OEI and 2-minute OEI power ratings are desired, and following completion of the tests under paragraphs (b), (c), (d), or (e) of this section, the applicant may disassemble the tested engine to the extent necessary to show compliance with the requirements of §33.93(a). The tested engine must then be reassembled using the same parts used during the test runs of paragraphs (b), (c), (d), or (e) of this section, except those parts described as consumables in the Instructions for Continued Airworthiness. Additionally, the tests required in paragraphs (f)(1) through (f)(8) of this section must be run continuously. If a stop occurs during these tests, the interrupted sequence must be repeated unless the applicant shows that the severity of the test would not be reduced if it were continued. The applicant must conduct the following test sequence four times, for a total time of not less than 120 minutes:

* * * * *

(4) *30-minute OEI power, continuous OEI power, or maximum continuous power.* Five minutes at whichever is the greatest of rated 30-minute OEI power, rated continuous OEI power, or rated maximum continuous power, except that, during the first test sequence, this period shall be 65 minutes. However, where the greatest rated power is 30-minute OEI power, that sixty-five minute period shall consist of 30 minutes at 30-minute OEI power followed by 35 minutes at whichever is the greater of continuous OEI power or maximum continuous power.

* * * * *

(8) *Idle.* One minute at flight idle.

* * * * *

[As amended by Amdt. 33-25, 73 FR 48123, Aug. 18, 2008]

Amend Section 33.88 by removing paragraph (b), redesignating (c) and (d) as paragraphs (b) and (c), respectively; and revising the text of the newly designated paragraph (b) to read as follows:

§33.88 Engine overtemperature test.

* * * * *

(b) In addition to the test requirements in paragraph (a) of this section, each engine for which 30-second OEI and 2-minute OEI ratings are desired, that incorporates a means for automatic temperature control within its operating limitations in accordance with §33.67(d), must run for a period of 4 minutes at the maximum power-on rpm with the gas temperature at least 35°F (19°C) higher than the maximum operating limit at 30-second OEI rating. Following this run, the turbine assembly may exhibit distress beyond the limits for an overtemperature condition provided the engine is shown by analysis or test, as found necessary by the FAA, to maintain the integrity of the turbine assembly.

* * * * *

[As amended by Amdt. 33-25, 73 FR 48124, Aug. 18, 2008]

Revise Section 33.93(b)(2) to read as follows:

§33.93 Teardown inspection.

* * * * *

(b) ***

(2) Each engine may exhibit deterioration in excess of that permitted in paragraph (a)(2) of this section, including some engine parts or components that may be unsuitable for further use. The applicant must show by inspection, analysis, test, or by any combination thereof as found necessary by the FAA, that structural integrity of the engine is maintained; or

* * * * *

[As amended by Amdt. 33-25, 73 FR 48124, Aug. 18, 2008]

Amend Appendix A to Part 33 by revising section A33.4 to read:

**Appendix A to Part 33—
Instructions for Continued Airworthiness**

* * * * *

A33.4 Airworthiness Limitations Section

The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the manual.

(a) For all engines:

(1) The Airworthiness Limitations section must set forth each mandatory replacement time, inspection interval, and related procedure required for type certification. If the Instructions for Continued Airworthiness consist of multiple documents, the section required under this paragraph must be included in the principal manual.

(2) This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is FAA approved and specifies maintenance required under §§43.16 and 91.403 of Title 14 of the Code of Federal Regulations unless an alternative program has been FAA approved."

(b) For rotorcraft engines having 30-second OEI and 2-minute OEI ratings:

(1) The Airworthiness Limitations section must also prescribe the mandatory post-flight inspections and maintenance actions associated with any use of either 30-second OEI or 2-minute OEI ratings.

(2) The applicant must validate the adequacy of the inspections and maintenance actions required under paragraph (b)(1) of this section A33.4.

(3) The applicant must establish an in-service engine evaluation program to ensure the continued adequacy of the instructions for mandatory post-flight inspections and maintenance actions prescribed under paragraph (b)(1) of this section A33.4 and of the data for §33.5(b)(4) pertaining to power availability. The program must include service engine tests or equivalent service engine test experience on engines of similar design and evaluations of service usage of the 30-second OEI or 2-minute OEI ratings.

[As amended by Amdt. 33–25, 73 FR 48124, Aug. 18, 2008]

AUGUST 15, 2008

Part 26—Continued Airworthiness and Safety Improvements for Transport Category Airplanes

The heading for Subpart B is revised as set forth below:

Subpart B— Enhanced Airworthiness Program for Airplane Systems

[As amended by Amdt. 26–0, 73 FR 47818, Aug. 15, 2008]

AUGUST 12, 2008

DATES: This final rule is effective on February 9, 2009. Affected parties, however, do not have to comply with the information collection requirement in §91.161 until the FAA publishes in the Federal Register the control number assigned by the Office of Management and Budget (OMB) for this information collection requirement.

Part 91—General Operating and Flight Rules

Add Section 91.161 to read as follows:

§91.161 Special awareness training required for pilots flying under visual flight rules within a 60-nautical mile radius of the Washington, DC VOR/DME.

(a) Operations within a 60-nautical mile radius of the Washington, DC VOR/DME under visual flight rules (VFR). Except as provided under paragraph (e) of this section, no person may serve as a pilot in command or as second in command of an aircraft while flying within a 60-nautical mile radius of the DCA VOR/DME, under VFR, unless that pilot has completed Special Awareness Training and holds a certificate of training completion.

(b) Special Awareness Training. The Special Awareness Training consists of information to educate pilots about the procedures for flying in the Washington, DC area and, more generally, in other types of special use airspace. This free training is available on the FAA's Web site. Upon completion of the training, each person will need to print out a copy of the certificate of training completion.

(c) Inspection of certificate of training completion. Each person who holds a certificate for completing the Special Awareness Training must present it for inspection upon request from:

- (1) An authorized representative of the FAA;
- (2) An authorized representative of the National Transportation Safety Board;
- (3) Any Federal, State, or local law enforcement officer; or
- (4) An authorized representative of the Transportation Security Administration.

(d) Emergency declared. The failure to complete the Special Awareness Training course on flying in and around the Washing-

ton, DC Metropolitan Area is not a violation of this section if an emergency is declared by the pilot, as described under §91.3(b), or there was a failure of two-way radio communications when operating under IFR as described under §91.185.

(e) Exceptions. The requirements of this section do not apply if the flight is being performed in an aircraft of an air ambulance operator certificated to conduct part 135 operations under this chapter, the U.S. Armed Forces, or a law enforcement agency.

[Docket No. FAA–2006–25250, 73 FR 46803, Aug. 12, 2008]

JULY 24, 2008

Effective date: August 25, 2008

Part 65—Certification: Airmen Other Than Flight Crewmembers

Amend Section 65.16 by revising paragraph (c) introductory text to read as follows:

§65.16 Change of name: Replacement of lost or destroyed certificate.

* * * * *

(c) An application for a replacement of a lost or destroyed medical certificate is made by letter to the Department of Transportation, Federal Aviation Administration, Aerospace Medical Certification Division, Post Office Box 26200, Oklahoma City, OK 73125, accompanied by a check or money order for \$2.00.

* * * * *

[As amended by Amdt. 65–52, 73 FR 43065, July 24, 2008]

Part 183—Representatives of the Administrator

Amend Section 183.11 by revising paragraph (a) to read as follows:

§183.11 Selection.

(a) The Federal Air Surgeon, or his or her authorized representatives within the FAA, may select Aviation Medical Examiners from qualified physicians who apply. In addition, the Federal Air Surgeon may designate qualified forensic pathologists to assist in the medical investigation of aircraft accidents.

* * * * *

[As amended by Amdt. 183–13, 73 FR 43066, July 24, 2008]

Revise Section 183.15 to read as follows:

§183.15 Duration of certificates.

(a) Unless sooner terminated under paragraph (b) of this section, a designation as an Aviation Medical Examiner or as a Flight Standards or Aircraft Certification Service Designated Representative as described in §§183.21, 183.23, 183.25, 183.27, 183.29, 183.31, or 183.33 is effective until the expiration date shown on the document granting the authorization.

(b) A designation made under this subpart terminates:

- (1) Upon the written request of the representative;
- (2) Upon the written request of the employer in any case in which the recommendation of the employer is required for the designation;
- (3) Upon the representative being separated from the employment of the employer who recommended him or her for certification;
- (4) Upon a finding by the Administrator that the representative has not properly performed his or her duties under the designation;
- (5) Upon the assistance of the representative being no longer needed by the Administrator; or

(6) For any reason the Administrator considers appropriate.
 [Docket No. FAA-2007-27812, 73 FR 43066, July 24, 2008]

JULY 21, 2008

Effective Date: September 19, 2008

**Part 25—Airworthiness Standards:
 Transport Category Airplanes**

§25.5 was added, §25.981 was revised, and Appendix M and Appendix N were added to Part 25.

PART 25 IS AVAILABLE AS A FREE DOWNLOAD FROM ASA'S FAR/AIM UPDATE WEBSITE:

WWW.ASA2FLY.COM/FARUPDATE

**Part 26—Continued Airworthiness and
 Safety Improvements for Transport Category
 Airplanes**

Revise Section 26.5 to read as follows:

§26.5 Applicability Table.

Table 1 of this section provides an overview of the applicability of this part. It provides guidance in identifying what sections apply to various types of entities. The specific applicability of each subpart and section is specified in the regulatory text.

TABLE 1—APPLICABILITY OF PART 26 RULES

	APPLICABLE SECTIONS		
	SUBPART B EAPAS/FTS	SUBPART D FUEL TANK FLAMMABILITY	SUBPART E DAMAGE TOLERANCE DATA
Effective date of rule	December 10, 2007	December 26, 2008	January 11, 2008
Existing ¹ TC Holders	26.11	26.33	26.43, 26.45, 26.49
Pending ¹ TC Applicants	26.11	26.37	26.43, 26.45
Existing ¹ STC Holders	N/A	26.35	26.47, 26.49
Pending ¹ STC/ATC Applicants	26.11	26.35	26.45, 26.47, 26.49
Future ² STC/ATC Applicants	26.11	26.35	26.45, 26.47, 26.49
Manufacturers	N/A	26.39	N/A

¹ As of the effective date of the identified rule.

² Application made after the effective date of the identified rule.

[Docket No. FAA-2005-22997, 73 FR 42498, July 21, 2008; as amended by Amdt. 26-3, 74 FR 31618, July 2, 2009]

Amend Part 26 by adding a new Subpart D to read as follows:

Subpart D—Fuel Tank Flammability

General

Sec.

- 26.31 Definitions.
- 26.33 Holders of type certificates: Fuel tank flammability.
- 26.35 Changes to type certificates affecting fuel tank flammability.
- 26.37 Pending type certification projects: Fuel tank flammability.
- 26.39 Newly produced airplanes: Fuel tank flammability.

Subpart D—Fuel Tank Flammability

Source: Docket No. FAA-2005-22997, 73 FR 42499, July 21, 2008, unless otherwise noted.

General

§26.31 Definitions.

For purposes of this subpart—

(a) **Fleet Average Flammability Exposure** has the meaning defined in Appendix N of part 25 of this chapter.

(b) **Normally Emptied** means a fuel tank other than a Main Fuel Tank. Main Fuel Tank is defined in 14 CFR 25.981(b).

§26.33 Holders of type certificates: Fuel tank flammability.

(a) **Applicability.** This section applies to U.S. type certificated transport category, turbine-powered airplanes, other than those

designed solely for all-cargo operations, for which the State of Manufacture issued the original certificate of airworthiness or export airworthiness approval on or after January 1, 1992, that, as a result of original type certification or later increase in capacity have:

- (1) A maximum type-certificated passenger capacity of 30 or more, or
- (2) A maximum payload capacity of 7,500 pounds or more.

(b) Flammability Exposure Analysis.

(1) *General.* Within 150 days after September 19, 2008, holders of type certificates must submit for approval to the FAA Oversight Office a flammability exposure analysis of all fuel tanks defined in the type design, as well as all design variations approved under the type certificate that affect flammability exposure. This analysis must be conducted in accordance with Appendix N of part 25 of this chapter.

(2) *Exception.* This paragraph (b) does not apply to—

- (i) Fuel tanks for which the type certificate holder has notified the FAA under paragraph (g) of this section that it will provide design changes and service instructions for Flammability Reduction Means or an Ignition Mitigation Means (IMM) meeting the requirements of paragraph (c) of this section.
- (ii) Fuel tanks substantiated to be conventional unheated aluminum wing tanks.

(c) **Design Changes.** For fuel tanks with a Fleet Average Flammability Exposure exceeding 7 percent, one of the following design changes must be made.

(1) *Flammability Reduction Means (FRM)*. A means must be provided to reduce the fuel tank flammability.

(i) Fuel tanks that are designed to be Normally Emptied must meet the flammability exposure criteria of Appendix M of part 25 of this chapter if any portion of the tank is located within the fuselage contour.

(ii) For all other fuel tanks, the FRM must meet all of the requirements of Appendix M of part 25 of this chapter, except, instead of complying with paragraph M25.1 of this appendix, the Fleet Average Flammability Exposure may not exceed 7 percent.

(2) *Ignition Mitigation Means (IMM)*. A means must be provided to mitigate the effects of an ignition of fuel vapors within the fuel tank such that no damage caused by an ignition will prevent continued safe flight and landing.

(d) Service Instructions. No later than September 20, 2010, holders of type certificates required by paragraph (c) of this section to make design changes must meet the requirements specified in either paragraph (d)(1) or (d)(2) of this section. The required service instructions must identify each airplane subject to the applicability provisions of paragraph (a) of this section.

(1) *FRM*. The type certificate holder must submit for approval by the FAA Oversight Office design changes and service instructions for installation of fuel tank flammability reduction means (FRM) meeting the criteria of paragraph (c) of this section.

(2) *IMM*. The type certificate holder must submit for approval by the FAA Oversight Office design changes and service instructions for installation of fuel tank IMM that comply with 14 CFR 25.981(c) in effect on September 19, 2008.

(e) Instructions for Continued Airworthiness (ICA). No later than September 20, 2010, holders of type certificates required by paragraph (c) of this section to make design changes must submit for approval by the FAA Oversight Office, critical design configuration control limitations (CD-CCL), inspections, or other procedures to prevent increasing the flammability exposure of any tanks equipped with FRM above that permitted under paragraph (c)(1) of this section and to prevent degradation of the performance of any IMM provided under paragraph (c)(2) of this section. These CD-CCL, inspections, and procedures must be included in the Airworthiness Limitations Section (ALS) of the ICA required by 14 CFR 25.1529 or paragraph (f) of this section. Unless shown to be impracticable, visible means to identify critical features of the design must be placed in areas of the airplane where foreseeable maintenance actions, repairs, or alterations may compromise the critical design configuration limitations. These visible means must also be identified as a CD-CCL.

(f) Airworthiness Limitations. Unless previously accomplished, no later than September 20, 2010, holders of type certificates affected by this section must establish an ALS of the maintenance manual or ICA for each airplane configuration evaluated under paragraph (b)(1) of this section and submit it to the FAA Oversight Office for approval. The ALS must include a section that contains the CD-CCL, inspections, or other procedures developed under paragraph (e) of this section.

(g) Compliance Plan for Flammability Exposure Analysis. Within 90 days after September 19, 2008, each holder of a type certificate required to comply with paragraph (b) of this section must submit to the FAA Oversight Office a compliance plan consisting of the following:

(1) A proposed project schedule for submitting the required analysis, or a determination that compliance with paragraph (b) of this section is not required because design changes and service instructions for FRM or IMM will be developed and made available as required by this section.

(2) A proposed means of compliance with paragraph (b) of this section, if applicable.

(h) Compliance Plan for Design Changes and Service Instructions. Within 210 days after September 19, 2008, each holder of a type certificate required to comply with paragraph (d) of this section must submit to the FAA Oversight Office a compliance plan consisting of the following:

(1) A proposed project schedule, identifying all major milestones, for meeting the compliance dates specified in paragraphs (d), (e) and (f) of this section.

(2) A proposed means of compliance with paragraphs (d), (e) and (f) of this section.

(3) A proposal for submitting a draft of all compliance items required by paragraphs (d), (e) and (f) of this section for review by the FAA Oversight Office not less than 60 days before the compliance times specified in those paragraphs.

(4) A proposal for how the approved service information and any necessary modification parts will be made available to affected persons.

(i) Each affected type certificate holder must implement the compliance plans, or later revisions, as approved under paragraph (g) and (h) of this section.

§26.35 Changes to type certificates affecting fuel tank flammability.

(a) Applicability. This section applies to holders and applicants for approvals of the following design changes to any airplane subject to 14 CFR 26.33(a):

(1) Any fuel tank designed to be Normally Emptied if the fuel tank installation was approved pursuant to a supplemental type certificate or a field approval before September 19, 2008;

(2) Any fuel tank designed to be Normally Emptied if an application for a supplemental type certificate or an amendment to a type certificate was made before September 19, 2008 and if the approval was not issued before September 19, 2008; and

(3) If an application for a supplemental type certificate or an amendment to a type certificate is made on or September 19, 2008, any of the following design changes:

(i) Installation of a fuel tank designed to be Normally Emptied,

(ii) Changes to existing fuel tank capacity, or

(iii) Changes that may increase the flammability exposure of an existing fuel tank for which FRM or IMM is required by §26.33(c).

(b) Flammability Exposure Analysis—

(1) *General.* By the times specified in paragraphs (b)(1)(i) and (b)(1)(ii) of this section, each person subject to this section must submit for approval a flammability exposure analysis of the auxiliary fuel tanks or other affected fuel tanks, as defined in the type design, to the FAA Oversight Office. This analysis must be conducted in accordance with Appendix N of part 25 of this chapter.

(i) Holders of supplemental type certificates and field approvals: Within 12 months of September 19, 2008,

(ii) Applicants for supplemental type certificates and for amendments to type certificates: Within 12 months after September 19, 2008, or before the certificate is issued, whichever occurs later.

(2) *Exception.* This paragraph does not apply to—

(i) Fuel tanks for which the type certificate holder, supplemental type certificate holder, or field approval holder has notified the FAA under paragraph (f) of this section that it will provide design changes and service instructions for an IMM meeting the requirements of §25.981(c) in effect September 19, 2008; and

(ii) Fuel tanks substantiated to be conventional unheated aluminum wing tanks.

(c) Impact Assessment. By the times specified in paragraphs (c)(1) and (c)(2) of this section, each person subject to paragraph (a)(1) of this section holding an approval for installation of a Normally Empty fuel tank on an airplane model listed in Table 1 of this section, and each person subject to paragraph (a)(3)(iii) of this section, must submit for approval to the FAA Oversight Office an assessment of the fuel tank system, as modified by their design change. The assessment must identify any features of the design change that compromise any critical design configuration control limitation (CD-CCL) applicable to any airplane on which the design change is eligible for installation.

(1) Holders of supplemental type certificates and field approvals: Before March 21, 2011.

(2) Applicants for supplemental type certificates and for amendments to type certificates: Before March 21, 2011 or before the certificate is issued, whichever occurs later.

TABLE 1

MODEL—BOEING
747 Series
737 Series
777 Series
767 Series
757 Series
MODEL—AIRBUS
A318, A319, A320, A321 Series
A300, A310 Series
A330, A340 Series

(d) Design Changes and Service Instructions. By the times specified in paragraph (e) of this section, each person subject to this section must meet the requirements of paragraphs (d)(1) or (d)(2) of this section, as applicable.

(1) For holders and applicants subject to paragraph (a)(1) or (a)(3)(iii) of this section, if the assessment required by paragraph (c) of this section identifies any features of the design change that compromise any CD-CCL applicable to any airplane on which the design change is eligible for installation, the holder or applicant must submit for approval by the FAA Oversight Office design changes and service instructions for Flammability Impact Mitigation Means (FIMM) that would bring the design change into compliance with the CD-CCL. Any fuel tank modified as required by this paragraph must also be evaluated as required by paragraph (b) of this section.

(2) Applicants subject to paragraph (a)(2), or (a)(3)(i) of this section must comply with the requirements of 14 CFR 25.981, in effect on September 19, 2008.

(3) Applicants subject to paragraph (a)(3)(ii) of this section must comply with the requirements of 14 CFR 26.33.

(e) Compliance Times for Design Changes and Service Instructions. The following persons subject to this section must comply with the requirements of paragraph (d) of this section at the specified times.

(1) Holders of supplemental type certificates and field approvals: Before September 19, 2012.

(2) Applicants for supplemental type certificates and for amendments to type certificates: Before September 19, 2012, or before the certificate is issued, whichever occurs later.

(f) Compliance Planning. By the applicable date specified in Table 2 of this section, each person subject to paragraph (a)(1) of this section must submit for approval by the FAA Oversight Office compliance plans for the flammability exposure analysis required by paragraph (b) of this section, the impact assessment required by paragraph (c) of this section, and the design changes and service instructions required by paragraph (d) of this section. Each person's compliance plans must include the following:

(1) A proposed project schedule for submitting the required analysis or impact assessment.

(2) A proposed means of compliance with paragraph (d) of this section.

(3) For the requirements of paragraph (d) of this section, a proposal for submitting a draft of all design changes, if any are required, and Airworthiness Limitations (including CD-CCLs) for review by the FAA Oversight Office not less than 60 days before the compliance time specified in paragraph (e) of this section.

(4) For the requirements of paragraph (d) of this section, a proposal for how the approved service information and any neces-

sary modification parts will be made available to affected persons.

TABLE 2—COMPLIANCE PLANNING DATES

	Flammability exposure analysis plan	Impact assessment plan	Design changes and service instructions plan
STC and Field Approval Holders	December 18, 2008	November 19, 2010	May 19, 2011

(g) Each person subject to this section must implement the compliance plans, or later revisions, as approved under paragraph (f) of this section.

§26.37 Pending type certification projects: Fuel tank flammability.

(a) **Applicability.** This section applies to any new type certificate for a transport category airplane, if the application was made before September 19, 2008, and if the certificate was not issued September 19, 2008. This section applies only if the airplane would have—

(1) A maximum type-certificated passenger capacity of 30 or more, or

(2) A maximum payload capacity of 7,500 pounds or more.

(b) If the application was made on or after June 6, 2001, the requirements of 14 CFR 25.981 in effect on September 19, 2008, apply.

§26.39 Newly produced airplanes: Fuel tank flammability.

(a) **Applicability:** This section applies to Boeing model airplanes specified in Table 1 of this section, including passenger and cargo versions of each model, when application is made for original certificates of airworthiness or export airworthiness approvals after September 20, 2010.

TABLE 1

Model—Boeing
747 Series
737 Series
777 Series
767 Series
757 Series

(b) Any fuel tank meeting all of the criteria stated in paragraphs (b)(1), (b)(2) and (b)(3) of this section must have flammability reduction means (FRM) or ignition mitigation means (IMM) that meet the requirements of 14 CFR 25.981 in effect on September 19, 2008.

(1) The fuel tank is Normally Emptied.

(2) Any portion of the fuel tank is located within the fuselage contour.

(3) The fuel tank exceeds a Fleet Average Flammability Exposure of 7 percent.

(c) All other fuel tanks that exceed a Fleet Average Flammability Exposure of 7 percent must have an IMM that meets 14 CFR 25.981(d) in effect on September 19, 2008, or an FRM that meets all of the requirements of Appendix M to this part, except instead of complying with paragraph M25.1 of that appendix, the Fleet Average Flammability Exposure may not exceed 7 percent.

Part 121—Operating Requirements: Domestic, Flag, and Supplemental Operations

Amend Part 121 by adding a new Section 121.1117 to Subpart AA, to read as follows:

§121.1117 Flammability reduction means.

(a) **Applicability.** Except as provided in paragraph (o) of this section, this section applies to transport category, turbine-powered airplanes with a type certificate issued after January 1, 1958, that, as a result of original type certification or later increase in capacity have:

(1) A maximum type-certificated passenger capacity of 30 or more, or

(2) A maximum payload capacity of 7,500 pounds or more.

(b) **New Production Airplanes.** Except in accordance with §121.628, no certificate holder may operate an airplane identified in Table 1 of this section (including all-cargo airplanes) for which the State of Manufacture issued the original certificate of airworthiness or export airworthiness approval after September 20, 2010 unless an Ignition Mitigation Means (IMM) or Flammability Reduction Means (FRM) meeting the requirements of §26.33 of this chapter is operational.

TABLE 1

MODEL—BOEING	MODEL—AIRBUS
747 Series	A318, A319, A320, A321 Series A330, A340 Series
737 Series	
777 Series	
767 Series	

(c) **Auxiliary Fuel Tanks.** After the applicable date stated in paragraph (e) of this section, no certificate holder may operate any airplane subject to §26.33 of this chapter that has an Auxiliary Fuel Tank installed pursuant to a field approval, unless the following requirements are met:

(1) The certificate holder complies with 14 CFR 26.35 by the applicable date stated in that section.

(2) The certificate holder installs Flammability Impact Mitigation Means (FIMM), if applicable, that is approved by the FAA Oversight Office.

(3) Except in accordance with §121.628, the FIMM, if applicable, is operational.

(d) **Retrofit.** Except as provided in paragraphs (j), (k), and (l) of this section, after the dates specified in paragraph (e) of this section, no certificate holder may operate an airplane to which this section applies unless the requirements of paragraphs (d)(1) and (d)(2) of this section are met.

(1) IMM, FRM or FIMM, if required by §§26.33, 26.35, or 26.37 of this chapter, that are approved by the FAA Oversight Office, are installed within the compliance times specified in paragraph (e) of this section.

(2) Except in accordance with §121.628, the IMM, FRM or FIMM, as applicable, are operational.

(e) Compliance Times. Except as provided in paragraphs (k) and (l) of this section, the installations required by paragraph (d) of this section must be accomplished no later than the applicable dates specified in paragraph (e)(1), (e)(2), or (e)(3) of this section.

(1) Fifty percent of each certificate holder's fleet identified in paragraph (d)(1) of this section must be modified no later than September 19, 2014.

(2) One hundred percent of each certificate holder's fleet identified in paragraph (d)(1) of this section must be modified no later than September 19, 2017.

(3) For those certificate holders that have only one airplane of a model identified in Table 1 of this section, the airplane must be modified no later than September 19, 2017.

(f) Compliance After Installation. Except in accordance with §121.628, no certificate holder may—

(1) Operate an airplane on which IMM or FRM has been installed before the dates specified in paragraph (e) of this section unless the IMM or FRM is operational, or

(2) Deactivate or remove an IMM or FRM once installed unless it is replaced by a means that complies with paragraph (d) of this section.

(g) Maintenance Program Revisions. No certificate holder may operate an airplane for which airworthiness limitations have been approved by the FAA Oversight Office in accordance with §§26.33, 26.35, or 26.37 of this chapter after the airplane is modified in accordance with paragraph (d) of this section unless the maintenance program for that airplane is revised to include those applicable airworthiness limitations.

(h) After the maintenance program is revised as required by paragraph (g) of this section, before returning an airplane to service after any alteration for which airworthiness limitations are required by §§25.981, 26.33, or 26.37 of this chapter, the certificate holder must revise the maintenance program for the airplane to include those airworthiness limitations.

(i) The maintenance program changes identified in paragraphs (g) and (h) of this section must be submitted to the operator's Principal Maintenance Inspector responsible for review and approval prior to incorporation.

(j) The requirements of paragraph (d) of this section do not apply to airplanes operated in all-cargo service, but those airplanes are subject to paragraph (f) of this section.

(k) The compliance dates specified in paragraph (e) of this section may be extended by one year, provided that—

(1) No later than December 18, 2008, the certificate holder notifies its assigned Flight Standards Office or Principal Inspector that it intends to comply with this paragraph;

(2) No later than March 18, 2009, the certificate holder applies for an amendment to its operations specification in accordance with §119.51 of this chapter and revises the manual required by §121.133 to include a requirement for the airplane models specified in Table 2 of this section to use ground air conditioning systems for actual gate times of more than 30 minutes, when available at the gate and operational, whenever the ambient temperature exceeds 60 degrees Fahrenheit; and

(3) Thereafter, the certificate holder uses ground air conditioning systems as described in paragraph (k)(2) of this section on each airplane subject to the extension.

TABLE 2

MODEL—BOEING	MODEL—AIRBUS
747 Series	A318, A319, A320, A321 Series
737 Series	A300, A310 Series
777 Series	A330, A340 Series
767 Series	
757 Series	

(l) For any certificate holder for which the operating certificate is issued after September 19, 2008, the compliance date specified in paragraph (e) of this section may be extended by one year, provided that the certificate holder meets the requirements of paragraph (k)(2) of this section when its initial operations specifications are issued and, thereafter, uses ground air conditioning systems as described in paragraph (k)(2) of this section on each airplane subject to the extension.

(m) After the date by which any person is required by this section to modify 100 percent of the affected fleet, no certificate holder may operate in passenger service any airplane model specified in Table 2 of this section unless the airplane has been modified to comply with §26.33(c) of this chapter.

(n) No certificate holder may operate any airplane on which an auxiliary fuel tank is installed after September 19, 2017 unless the FAA has certified the tank as compliant with §25.981 of this chapter, in effect on September 19, 2008.

(o) Exclusions. The requirements of this section do not apply to the following airplane models:

- (1) Convair CV-240, 340, 440, including turbine powered conversions.
- (2) Lockheed L-188 Electra.
- (3) Vickers Armstrong Viscount.
- (4) Douglas DC-3, including turbine powered conversions.
- (5) Bombardier CL-44.
- (6) Mitsubishi YS-11.
- (7) BAC 1-11.
- (8) Concorde.
- (9) deHavilland D.H. 106 Comet 4C.
- (10) VFW—Vereinigte Flugtechnische VFW-614.
- (11) Ilyushin Aviation IL 96T.
- (12) Vickers Armstrong Viscount.
- (13) Bristol Aircraft Britannia 305.
- (14) Handley Page Herald Type 300.
- (15) Avions Marcel Dassault—Breguet Aviation Mercure 100C.
- (16) Airbus Caravelle.
- (17) Fokker F-27/Fairchild Hiller FH-227.
- (18) Lockheed L-300.

[Docket No. FAA-2005-22997, 73 FR 42501, July 21, 2008]

Part 125—Certification and Operations; Airplanes Having a Seating Capacity of 20 or More Passengers or a Maximum Payload Capacity of 6,000 Pounds or More; and Rules Governing Persons On Board Such Aircraft

Amend Part 125 by adding a new Section 125.509 to read:

§125.509 Flammability reduction means.

(a) **Applicability.** Except as provided in paragraph (m) of this section, this section applies to transport category, turbine-powered airplanes with a type certificate issued after January 1, 1958, that, as a result of original type certification or later increase in capacity have:

- (1) A maximum type-certificated passenger capacity of 30 or more, or
- (2) A maximum payload capacity of 7,500 pounds or more.

(b) **New Production Airplanes.** Except in accordance with §125.201, no person may operate an airplane identified in Table 1 of this section (including all-cargo airplanes) for which the State of Manufacture issued the original certificate of airworthiness or export airworthiness approval after September 20, 2010 unless an Ignition Mitigation Means (IMM) or Flammability Reduction Means (FRM) meeting the requirements of §26.33 of this chapter is operational.

TABLE 1

MODEL—BOEING	MODEL—AIRBUS
747 Series 737 Series 777Series 767 Series	A318, A319, A320, A321 Series A330, A340 Series

(c) **Auxiliary Fuel Tanks.** After the applicable date stated in paragraph (e) of this section, no person may operate any airplane subject to §26.33 of this chapter that has an Auxiliary Fuel Tank installed pursuant to a field approval, unless the following requirements are met:

- (1) The person complies with 14 CFR 26.35 by the applicable date stated in that section.
- (2) The person installs Flammability Impact Mitigation Means (FIMM), if applicable, that is approved by the FAA Oversight Office.
- (3) Except in accordance with §125.201, the FIMM, if applicable, are operational.

(d) **Retrofit.** Except as provided in paragraph (j) of this section, after the dates specified in paragraph (e) of this section, no person may operate an airplane to which this section applies unless the requirements of paragraphs (d)(1) and (d)(2) of this section are met.

(1) Ignition Mitigation Means (IMM), Flammability Reduction Means (FRM), or FIMM, if required by §§26.33, 26.35, or 26.37 of this chapter, that are approved by the FAA Oversight Office, are installed within the compliance times specified in paragraph (e) of this section.

(2) Except in accordance with §125.201 of this part, the IMM, FRM or FIMM, as applicable, are operational.

(e) **Compliance Times.** The installations required by paragraph (d) of this section must be accomplished no later than the applicable dates specified in paragraph (e)(1), (e)(2) or (e)(3) of this section.

(1) Fifty percent of each person's fleet of airplanes subject to paragraph (d)(1) of this section must be modified no later than September 19, 2014.

(2) One hundred percent of each person's fleet of airplanes subject to paragraph (d)(1) of this section must be modified no later than September 19, 2017.

(3) For those persons that have only one airplane of a model identified in Table 1 of this section, the airplane must be modified no later than September 19, 2017.

(f) **Compliance after Installation.** Except in accordance with §125.201, no person may—

(1) Operate an airplane on which IMM or FRM has been installed before the dates specified in paragraph (e) of this section unless the IMM or FRM is operational, or

(2) Deactivate or remove an IMM or FRM once installed unless it is replaced by a means that complies with paragraph (d) of this section.

(g) **Inspection Program Revisions.** No person may operate an airplane for which airworthiness limitations have been approved by the FAA Oversight Office in accordance with §§26.33, 26.35, or 26.37 of this chapter after the airplane is modified in accordance with paragraph (d) of this section unless the inspection program for that airplane is revised to include those applicable airworthiness limitations.

(h) After the inspection program is revised as required by paragraph (g) of this section, before returning an airplane to service after any alteration for which airworthiness limitations are required by §§25.981, 26.33, 26.35, or 26.37 of this chapter, the person must revise the inspection program for the airplane to include those airworthiness limitations.

(i) The inspection program changes identified in paragraphs (g) and (h) of this section must be submitted to the operator's assigned Flight Standards Office responsible for review and approval prior to incorporation.

(j) The requirements of paragraph (d) of this section do not apply to airplanes operated in all-cargo service, but those airplanes are subject to paragraph (f) of this section.

(k) After the date by which any person is required by this section to modify 100 percent of the affected fleet, no person may operate in passenger service any airplane model specified in Table 2 of this section unless the airplane has been modified to comply with §26.33(c) of this chapter.

(l) No person may operate any airplane on which an auxiliary fuel tank is installed after September 19, 2017 unless the FAA has certified the tank as compliant with §25.981 of this chapter, in effect on September 19, 2008.

(m) **Exclusions.** The requirements of this section do not apply to the following airplane models:

- (1) Convair CV-240, 340, 440, including turbine powered conversions.
- (2) Lockheed L-188 Electra.
- (3) Vickers Armstrong Viscount.
- (4) Douglas DC-3, including turbine powered conversions.
- (5) Bombardier CL-44.
- (6) Mitsubishi YS-11.
- (7) BAC 1-11.
- (8) Concorde.
- (9) deHavilland D.H. 106 Comet 4C.
- (10) VFW—Vereinigte Flugtechnische VFW-614.
- (11) Ilyushin Aviation IL 96T.
- (12) Vickers Armstrong Viscount.
- (13) Bristol Aircraft Britannia 305.
- (14) Handley Page Herald Type 300.
- (15) Avions Marcel Dassault—Breguet Aviation Mercure 100C.
- (16) Airbus Caravelle.
- (17) Fokker F-27/Fairchild Hiller FH-227.
- (18) Lockheed L-300.

[Docket No. FAA-2005-22997, 73 FR 42502, July 21, 2008]