

ASA's FAR-AMT 2012 Update

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/AM series annually, providing online Updates and an email subscription service so you're notified when a change has been made affecting the information in your books.

ASA's 2012 FAR for Aviation Maintenance Technicians book is current through June 23, 2011. With this Update, it is current through **April 13, 2012**.



PART 1 DEFINITIONS AND ABBREVIATIONS

- **Change Date:** February 16, 2012
- **Effective Date:** June 12, 2012
- **Source:** Amdt. 1–67, 77 FR 9166, 77 FR 22186

Amend Section 1.1 by removing the definitions of “Category IIIa operations,” “Category IIIb operations,” and “Category IIIc operations.”

PART 21 CERTIFICATION PROCEDURES FOR PRODUCTS AND PARTS

- **Change Date:** October 18, 2011
- **Effective Date:** December 19, 2011
- **Source:** Amdt. 21–95, 76 FR 64233

Amend Section 21.35 by revising paragraph (b)(2) to read as follows:

§21.35 Flight tests.

* * * * *

(b) ***

(2) For aircraft to be certificated under this subchapter, except gliders and except reciprocating engine powered airplanes of 6,000 lbs. or less maximum certificated weight that are to be certificated under Part 23 of this chapter, to determine whether there is reasonable assurance that the aircraft, its components, and its equipment are reliable and function properly.

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PART 23 AIRWORTHINESS STANDARDS: NORMAL, UTILITY, ACROBATIC, AND COMMUTER CATEGORY AIRPLANES

- **Change Date:** December 2, 2011
- **Effective Date:** January 31, 2012
- **Source:** Amdt. 23–62, 76 FR 75753

Amend Section 23.3 by revising the first sentence in paragraph (d) to read as follows:

§23.3 Airplane categories.

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(d) The commuter category is limited to multiengine airplanes that have a seating configuration, excluding pilot seats, of 19 or less, and a maximum certificated takeoff weight of 19,000 pounds or less. ***

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Amend Section 23.45 by revising the introductory text of paragraph (h) to read as follows:

§23.45 General.

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(h) For multiengine jets weighing over 6,000 pounds in the normal, utility, and acrobatic category and commuter category airplanes, the following also apply:

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Amend Section 23.49 by revising the section heading and the introductory text of paragraphs (a) and (c) to read as follows:

§23.49 Stalling speed.

(a) V_{S0} (maximum landing flap configuration) and V_{S1} are the stalling speeds or the minimum steady flight speeds, in knots (CAS), at which the airplane is controllable with—

* * * * *

(c) Except as provided in paragraph (d) of this section, V_{S0} at maximum weight may not exceed 61 knots for—

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Amend Section 23.51 by revising paragraph (b)(1) introductory text and paragraph (c) introductory text to read as follows:

§23.51 Takeoff speeds.

* * * * *

(b) * * *

(1) For multiengine airplanes, the highest of—

* * * * *

(c) For normal, utility, and acrobatic category multiengine jets of more than 6,000 pounds maximum weight and commuter category airplanes, the following apply:

* * * * *

Amend Section 23.53 by revising paragraph (c) to read as follows:

§23.53 Takeoff performance.

* * * * *

(c) For normal, utility, and acrobatic category multiengine jets of more than 6,000 pounds maximum weight and commuter category airplanes, takeoff performance, as required by §§23.55 through 23.59, must be determined with the operating engine(s) within approved operating limitations.

Amend Section 23.55 by revising the introductory text to read as follows:

§23.55 Accelerate-stop distance.

For normal, utility, and acrobatic category multiengine jets of more than 6,000 pounds maximum weight and commuter category airplanes, the accelerate-stop distance must be determined as follows:

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Amend Section 23.57 by revising the introductory text to read as follows:

§23.57 Takeoff path.

For normal, utility, and acrobatic category multiengine jets of more than 6,000 pounds maximum weight and commuter category airplanes, the takeoff path is as follows:

* * * * *

Amend Section 23.59 by revising the introductory text to read as follows:

§23.59 Takeoff distance and takeoff run.

For normal, utility, and acrobatic category multiengine jets of more than 6,000 pounds maximum weight and commuter category airplanes, the takeoff distance and, at the option of the applicant, the takeoff run, must be determined.

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Amend Section 23.61 by revising the introductory text to read as follows:

§23.61 Takeoff flight path.

For normal, utility, and acrobatic category multiengine jets of more than 6,000 pounds maximum weight and commuter category airplanes, the takeoff flight path must be determined as follows:

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Amend Section 23.63 by revising the introductory text of paragraphs (c) and (d) to read as follows:

§23.63 Climb: General.

* * * * *

(c) For reciprocating engine-powered airplanes of more than 6,000 pounds maximum weight, single-engine turbines, and multi-engine turbine airplanes of 6,000 pounds or less maximum weight in the normal, utility, and acrobatic category, compliance must be shown at weights as a function of airport altitude and ambient temperature, within the operational limits established for takeoff and landing, respectively, with—

* * * * *

(d) For multiengine turbine airplanes over 6,000 pounds maximum weight in the normal, utility, and acrobatic category and commuter category airplanes, compliance must be shown at weights as a function of airport altitude and ambient temperature within the operational limits established for takeoff and landing, respectively, with—

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Amend Section 23.65 by revising paragraph (b) to read as follows:

§23.65 Climb: All engines operating.

* * * * *

(b) Each normal, utility, and acrobatic category reciprocating engine-powered airplane of more than 6,000 pounds maximum weight, single-engine turbine, and multiengine turbine airplanes of 6,000 pounds or less maximum weight in the normal, utility, and acrobatic category must have a steady gradient of climb after takeoff of at least 4 percent with

* * * * *

Amend Section 23.67 by revising paragraph (b) introductory text and (b)(1) introductory text, redesignating paragraph (c) as paragraph (d), revising newly redesignated paragraph (d) introductory text, and adding new paragraph (c) to read as follows:

§23.67 Climb: One-engine inoperative.

* * * * *

(b) For normal, utility, and acrobatic category reciprocating engine-powered airplanes of more than 6,000 pounds maximum weight, and turbopropeller-powered airplanes in the normal, utility, and acrobatic category—

(1) The steady gradient of climb at an altitude of 400 feet above the takeoff must be no less than 1 percent with the—

* * * * *

(c) For normal, utility, and acrobatic category jets of 6,000 pounds or less maximum weight—

(1) The steady gradient of climb at an altitude of 400 feet above the takeoff must be no less than 1.2 percent with the—

- (i) Critical engine inoperative;
- (ii) Remaining engine(s) at takeoff power;
- (iii) Landing gear retracted;
- (iv) Wing flaps in the takeoff position(s); and
- (v) Climb speed equal to that achieved at 50 feet in the demonstration of §23.53.

(2) The steady gradient of climb may not be less than 0.75 percent at an altitude of 1,500 feet above the takeoff surface, or landing surface, as appropriate, with the—

- (i) Critical engine inoperative;

- (ii) Remaining engine(s) at not more than maximum continuous power;
- (iii) Landing gear retracted;
- (iv) Wing flaps retracted; and
- (v) Climb speed not less than $1.2 V_{S1}$.

(d) For jets over 6,000 pounds maximum weight in the normal, utility and acrobatic category and commuter category airplanes, the following apply:

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Revise Section 23.73 to read as follows:

§23.73 Reference landing approach speed.

(a) For normal, utility, and acrobatic category reciprocating engine-powered airplanes of 6,000 pounds or less maximum weight, the reference landing approach speed, V_{REF} , may not be less than the greater of V_{MC} , determined in §23.149(b) with the wing flaps in the most extended takeoff position, and $1.3 V_{S1}$.

(b) For normal, utility, and acrobatic category turbine powered airplanes of 6,000 pounds or less maximum weight, turboprops of more than 6,000 pounds maximum weight, and reciprocating engine-powered airplanes of more than 6,000 pounds maximum weight, the reference landing approach speed, V_{REF} , may not be less than the greater of V_{MC} , determined in §23.149(c), and $1.3 V_{S1}$.

(c) For normal, utility, and acrobatic category jets of more than 6,000 pounds maximum weight and commuter category airplanes, the reference landing approach speed, V_{REF} , may not be less than the greater of $1.05 V_{MC}$, determined in §23.149(c), and $1.3 V_{S1}$.

Amend Section 23.77 by revising the introductory text of paragraphs (b) and (c) to read as follows:

§23.77 Balked landing.

* * * * *

(b) Each normal, utility, and acrobatic category reciprocating engine-powered and single engine turbine powered airplane of more than 6,000 pounds maximum weight, and multiengine turbine engine-powered airplane of 6,000 pounds or less maximum weight in the normal, utility, and acrobatic category must be able to maintain a steady gradient of climb of at least 2.5 percent with—

* * * * *

(c) Each normal, utility, and acrobatic multiengine turbine powered airplane over 6,000 pounds maximum weight and each commuter category airplane must be able to maintain a steady gradient of climb of at least 3.2 percent with—

* * * * *

Amend Section 23.177 by revising paragraphs (a), (b), and (d) to read as follows:

§23.177 Static directional and lateral stability.

(a)(1) The static directional stability, as shown by the tendency to recover from a wings level sideslip with the rudder free, must be positive for any landing gear and flap position appropriate to the takeoff, climb, cruise, approach, and landing configurations. This must be shown with symmetrical power up to maximum continuous power, and at speeds from $1.2 V_{S1}$ up to V_{FE} , V_{LE} , V_{NO} , V_{FC}/M_{FC} , whichever is appropriate.

(2) The angle of sideslip for these tests must be appropriate to the type of airplane. The rudder pedal force must not reverse at larger angles of sideslip, up to that at which full rudder is used or a control force limit in §23.143 is reached, whichever occurs first, and at speeds from $1.2 V_{S1}$ to V_O .

(b)(1) The static lateral stability, as shown by the tendency to raise the low wing in a sideslip with the aileron controls free, may not be negative for any landing gear and flap position appropriate to the takeoff, climb, cruise, approach, and landing configurations. This must be shown with symmetrical power from idle up to 75 percent of maximum continuous power at speeds from $1.2 V_{S1}$ in the takeoff configuration(s) and at speeds from $1.3 V_{S1}$ in other configurations, up to the maximum allowable airspeed for the configuration being investigated (V_{FE} , V_{LE} , V_{NO} , V_{FC}/M_{FC} , whichever is appropriate) in the takeoff, climb, cruise, descent, and approach configurations. For the landing configuration, the power must be that necessary to maintain a 3-degree angle of descent in coordinated flight.

(2) The static lateral stability may not be negative at $1.2 V_{S1}$ in the takeoff configuration, or at $1.3 V_{S1}$ in other configurations.

(3) The angle of sideslip for these tests must be appropriate to the type of airplane, but in no case may the constant heading sideslip angle be less than that obtainable with a 10 degree bank or, if less, the maximum bank angle obtainable with full rudder deflection or 150 pound rudder force.

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(d)(1) In straight, steady slips at $1.2 V_{S1}$ for any landing gear and flap position appropriate to the takeoff, climb, cruise, approach, and landing configurations, and for any symmetrical power conditions up to 50 percent of maximum continuous power, the aileron and rudder control movements and forces must increase steadily, but not necessarily in constant proportion, as the angle of sideslip is increased up to the maximum appropriate to the type of airplane.

(2) At larger slip angles, up to the angle at which the full rudder or aileron control is used or a control force limit contained in §23.143 is reached, the aileron and rudder control movements and forces may not reverse as the angle of sideslip is increased.

(3) Rapid entry into, and recovery from, a maximum sideslip considered appropriate for the airplane may not result in uncontrollable flight characteristics.

Amend Section 23.181 by revising paragraph (b) to read as follows:

§23.181 Dynamic stability.

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(b) Any combined lateral-directional oscillations (Dutch roll) occurring between the stalling speed and the maximum allowable speed (V_{FE} , V_{LE} , V_{NO} , V_{FC}/M_{FC}) appropriate to the configuration of the airplane with the primary controls in both free and fixed position, must be damped to 1/10 amplitude in:

(1) Seven (7) cycles below 18,000 feet and

(2) Thirteen (13) cycles from 18,000 feet to the certified maximum altitude.

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Amend Section 23.201 by revising paragraph (d), by revising and redesignating current paragraph (e) as paragraph (f), and by adding a new paragraph (e) to read as follows:

§23.201 Wings level stall.

* * * * *

(d) During the entry into and the recovery from the maneuver, it must be possible to prevent more than 15 degrees of roll or yaw by the normal use of controls except as provided for in paragraph (e) of this section.

(e) For airplanes approved with a maximum operating altitude at or above 25,000 feet during the entry into and the recovery from stalls performed at or above 25,000 feet, it must be possible to prevent more than 25 degrees of roll or yaw by the normal use of controls.

(f) Compliance with the requirements of this section must be shown under the following conditions:

(1) *Wing flaps*: Retracted, fully extended, and each intermediate normal operating position, as appropriate for the phase of flight.

(2) *Landing gear*: Retracted and extended as appropriate for the altitude.

(3) *Cowl flaps*: Appropriate to configuration.

(4) *Spoilers/speedbrakes*: Retracted and extended unless they have no measureable effect at low speeds.

(5) *Power*:

(i) Power/Thrust off; and

(ii) For reciprocating engine powered airplanes: 75 percent of maximum continuous power. However, if the power-to-weight ratio at 75 percent of maximum continuous power results in nose-high attitudes exceeding 30 degrees, the test may be carried out with the power required for level flight in the landing configuration at maximum landing weight and a speed of $1.4 V_{S0}$, except that the power may not be less than 50 percent of maximum continuous power; or

(iii) For turbine engine powered airplanes: The maximum engine thrust, except that it need not exceed the thrust necessary to maintain level flight at $1.5 V_{S1}$ (where V_{S1} corresponds to the stalling speed with flaps in the approach position, the landing gear retracted, and maximum landing weight).

(6) *Trim*: At $1.5 V_{S1}$ or the minimum trim speed, whichever is higher.

(7) *Propeller*: Full increase r.p.m. position for the power off condition.

Amend Section 23.203 by revising paragraph (c) to read as follows:

§23.203 Turning flight and accelerated turning stalls.

* * * * *

(c) Compliance with the requirements of this section must be shown under the following conditions:

(1) *Wings flaps*: Retracted, fully extended, and each intermediate normal operating position as appropriate for the phase of flight.

(2) *Landing gear*: Retracted and extended as appropriate for the altitude.

(3) *Cowl flaps*: Appropriate to configuration.

(4) *Spoilers/speedbrakes*: Retracted and extended unless they have no measureable effect at low speeds.

(5) *Power*:

(i) Power/Thrust off; and

(ii) For reciprocating engine powered airplanes: 75 percent of maximum continuous power. However, if the power-to-weight ratio at 75 percent of maximum continuous power results in nose-high attitudes exceeding 30 degrees, the test may be carried out with the power required for level flight in the landing configuration at maximum landing weight and a speed of $1.4 V_{S0}$, except that the power may not be less than 50 percent of maximum continuous power; or

(iii) For turbine engine powered airplanes: The maximum engine thrust, except that it need not exceed the thrust necessary to maintain level flight at $1.5 V_{S1}$ (where V_{S1} corresponds to the stalling speed with flaps in the approach position, the landing gear retracted, and maximum landing weight).

(6) *Trim*: The airplane trimmed at $1.5 V_{S1}$.

(7) *Propeller*: Full increase rpm position for the power off condition.

Revise Section 23.251 to read as follows:

§23.251 Vibration and buffeting.

(a) There must be no vibration or buffeting severe enough to result in structural damage, and each part of the airplane must be free from excessive vibration, under any appropriate speed and power conditions up to V_D/M_D , or V_{DF}/M_{DF} for turbojets. In addition, there must be no buffeting in any normal flight condition, including configuration changes during cruise, severe enough to interfere with the satisfactory control of the airplane or cause excessive fatigue to the flight crew. Stall warning buffeting within these limits is allowable.

(b) There must be no perceptible buffeting condition in the cruise configuration in straight flight at any speed up to V_{MO}/M_{MO} , except stall buffeting, which is allowable.

(c) For airplanes with M_D greater than M 0.6 or a maximum operating altitude greater than 25,000 feet, the positive maneuvering load factors at which the onset of perceptible buffeting occurs must be determined with the airplane in the cruise configuration for the ranges of airspeed or Mach number, weight, and altitude for which the airplane is to be certificated. The envelopes of load factor, speed, altitude, and weight must provide a sufficient range of speeds and load factors for normal operations. Probable inadvertent excursions beyond the boundaries of the buffet onset envelopes may not result in unsafe conditions.

Amend Section 23.253 by revising paragraphs (b)(1) and (b)(2), and by adding new paragraphs (b)(3) and (d) to read as follows:

§23.253 High speed characteristics.

* * * * *

(b) ***

(1) Exceptional piloting strength or skill;

(2) Exceeding V_D/M_D , or V_{DF}/M_{DF} for turbojets, the maximum speed shown under §23.251, or the structural limitations; and

(3) Buffeting that would impair the pilot's ability to read the instruments or to control the airplane for recovery.

* * * * *

(d) *Maximum speed for stability characteristics*, V_{FC}/M_{FC} . V_{FC}/M_{FC} may not be less than a speed midway between V_{MO}/M_{MO} and V_{DF}/M_{DF} except that, for altitudes where Mach number is the limiting factor, M_{FC} need not exceed the Mach number at which effective speed warning occurs.

Section 23.255 is added to subpart B to read as follows:

§23.255 Out of trim characteristics.

For airplanes with an M_D greater than M 0.6 and that incorporate a trimmable horizontal stabilizer, the following requirements for out-of-trim characteristics apply:

(a) From an initial condition with the airplane trimmed at cruise speeds up to V_{MO}/M_{MO} , the airplane must have satisfactory maneuvering stability and controllability with the degree of out-of-trim in both the airplane nose-up and nose-down directions, which results from the greater of the following:

(1) A three-second movement of the longitudinal trim system at its normal rate for the particular flight condition with no aerodynamic load (or an equivalent degree of trim for airplanes that do not have a power-operated trim system), except as limited by

stops in the trim system, including those required by §23.655(b) for adjustable stabilizers; or

(2) The maximum mistrim that can be sustained by the autopilot while maintaining level flight in the high speed cruising condition.

(b) In the out-of-trim condition specified in paragraph (a) of this section, when the normal acceleration is varied from +1 g to the positive and negative values specified in paragraph (c) of this section, the following apply:

(1) The stick force versus g curve must have a positive slope at any speed up to and including V_{FC}/M_{FC} ; and

(2) At speeds between V_{FC}/M_{FC} and V_{DF}/M_{DF} , the direction of the primary longitudinal control force may not reverse.

(c) Except as provided in paragraphs (d) and (e) of this section, compliance with the provisions of paragraph (a) of this section must be demonstrated in flight over the acceleration range as follows:

(1) -1 g to +2.5 g; or

(2) 0 g to 2.0 g, and extrapolating by an acceptable method to -1 g and +2.5 g.

(d) If the procedure set forth in paragraph (c)(2) of this section is used to demonstrate compliance and marginal conditions exist during flight test with regard to reversal of primary longitudinal control force, flight tests must be accomplished from the normal acceleration at which a marginal condition is found to exist to the applicable limit specified in paragraph (b)(1) of this section.

(e) During flight tests required by paragraph (a) of this section, the limit maneuvering load factors, prescribed in §§23.333(b) and 23.337, need not be exceeded. In addition, the entry speeds for flight test demonstrations at normal acceleration values less than 1 g must be limited to the extent necessary to accomplish a recovery without exceeding V_{DF}/M_{DF} .

(f) In the out-of-trim condition specified in paragraph (a) of this section, it must be possible from an overspeed condition at V_{DF}/M_{DF} to produce at least 1.5 g for recovery by applying not more than 125 pounds of longitudinal control force using either the primary longitudinal control alone or the primary longitudinal control and the longitudinal trim system. If the longitudinal trim is used to assist in producing the required load factor, it must be shown at V_{DF}/M_{DF} that the longitudinal trim can be actuated in the airplane nose-up direction with the primary surface loaded to correspond to the least of the following airplane nose-up control forces:

(1) The maximum control forces expected in service, as specified in §§23.301 and 23.397.

(2) The control force required to produce 1.5 g.

(3) The control force corresponding to buffeting or other phenomena of such intensity that it is a strong deterrent to further application of primary longitudinal control force.

Amend Section 23.561 by adding new paragraph (e)(1), and adding and reserving paragraph (e)(2), to read as follows:

§23.561 General.

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(e) * * *

(1) For engines mounted inside the fuselage, aft of the cabin, it must be shown by test or analysis that the engine and attached accessories, and the engine mounting structure—

(i) Can withstand a forward acting static ultimate inertia load factor of 18.0 g plus the maximum takeoff engine thrust; or

(ii) The airplane structure is designed to preclude the engine and its attached accessories from entering or protruding into the cabin should the engine mounts fail.

(2) [Reserved]

Amend Section 23.562 by revising paragraphs (a) introductory text, (b) introductory text, and (c)(5)(ii) to read as follows:

§23.562 Emergency landing dynamic conditions.

(a) Each seat/restraint system for use in a normal, utility, or acrobatic category airplane, or in a commuter category jet airplane, must be designed to protect each occupant during an emergency landing when—

* * * * *

(b) Except for those seat/restraint systems that are required to meet paragraph (d) of this section, each seat/restraint system for crew or passenger occupancy in a normal, utility, or acrobatic category airplane, or in a commuter category jet airplane, must successfully complete dynamic tests or be demonstrated by rational analysis supported by dynamic tests, in accordance with each of the following conditions. These tests must be conducted with an occupant simulated by an anthropomorphic test dummy (ATD) defined by 49 CFR Part 572, subpart B, or an FAA-approved equivalent, with a nominal weight of 170 pounds and seated in the normal upright position.

* * * * *

(c) * * *

(5) * * *

(ii) The value of HIC is defined as—

$$HIC = \left\{ (t_2 - t_1) \left[\frac{1}{(t_2 - t_1)} \int_{t_1}^{t_2} a(t) dt \right]^{2.5} \right\}_{Max}$$

Where—

t_1 is the initial integration time, expressed in seconds, t_2 is the final integration time, expressed in seconds, and $a(t)$ is the total acceleration vs. time curve for the head strike expressed as a multiple of g (units of gravity).

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Amend Section 23.571 by adding a new paragraph (d) to read as follows:

§23.571 Metallic pressurized cabin structures.

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(d) If certification for operation above 41,000 feet is requested, a damage tolerance evaluation of the fuselage pressure boundary per §23.573(b) must be conducted.

Amend Section 23.629 by revising paragraphs (b)(1), (b)(3), (b)(4), and (c) to read as follows:

§23.629 Flutter.

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(b) * * *

(1) Proper and adequate attempts to induce flutter have been made within the speed range up to V_D/M_D , or V_{DF}/M_{DF} for jets;

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(3) A proper margin of damping exists at V_D/M_D , or V_{DF}/M_{DF} for jets; and

(4) As V_D/M_D (or V_{DF}/M_{DF} for jets) is approached, there is no large or rapid reduction in damping.

(c) Any rational analysis used to predict freedom from flutter, control reversal and divergence must cover all speeds up to 1.2 $V_D/1.2 M_D$, limited to Mach 1.0 for subsonic airplanes.

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Amend Section 23.703 by revising the introductory text and adding a new paragraph (c) to read as follows:

§23.703 Takeoff warning system.

For all airplanes with a maximum weight more than 6,000 pounds and all jets, unless it can be shown that a lift or longitudinal trim device that affects the takeoff performance of the airplane would not give an unsafe takeoff configuration when selected out of an approved takeoff position, a takeoff warning system must be installed and meet the following requirements:

* * * * *

(c) For the purpose of this section, an unsafe takeoff configuration is the inability to rotate or the inability to prevent an immediate stall after rotation.

Amend Section 23.735 by revising paragraph (e) to read as follows:

§23.735 Brakes.

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(e) For airplanes required to meet §23.55, the rejected takeoff brake kinetic energy capacity rating of each main wheel brake assembly may not be less than the kinetic energy absorption requirements determined under either of the following methods—

(1) The brake kinetic energy absorption requirements must be based on a conservative rational analysis of the sequence of events expected during a rejected takeoff at the design takeoff weight.

(2) Instead of a rational analysis, the kinetic energy absorption requirements for each main wheel brake assembly may be derived from the following formula:

$$KE = 0.0443 WV^2 / N$$

where—

KE = Kinetic energy per wheel (ft.-lbs.);

W = Design takeoff weight (lbs.);

V = Ground speed, in knots, associated with the maximum value of V₁ selected in accordance with §23.51(c)(1);

N = Number of main wheels with brakes.

Amend Section 23.777 by revising paragraph (d) to read as follows:

§23.777 Cockpit controls.

* * * * *

(d) When separate and distinct control levers are co-located (such as located together on the pedestal), the control location order from left to right must be power (thrust) lever, propeller (rpm control), and mixture control (condition lever and fuel cut-off for turbine-powered airplanes). Power (thrust) levers must be easily distinguishable from other controls, and provide for accurate, consistent operation. Carburetor heat or alternate air control must be to the left of the throttle or at least eight inches from the mixture control when located other than on a pedestal. Carburetor heat or alternate air control, when located on a pedestal, must be aft or below the power (thrust) lever. Supercharger controls must be located below or aft of the propeller controls. Airplanes with tandem seating or single-place airplanes may utilize control locations on the left side of the cabin compartment; however, location order from left to right must be power (thrust) lever, propeller (rpm control), and mixture control.

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Amend Section 23.807 by adding a new paragraph (e)(3) to read as follows:

§23.807 Emergency exits.

* * * * *

(e) * * *

(3) In lieu of paragraph (e)(2) of this section, if any side exit(s) cannot be above the waterline, a device may be placed at each of such exit(s) prior to ditching. This device must slow the inflow of water when such exit(s) is opened with the airplane ditched. For commuter category airplanes, the clear opening of such exit(s) must meet the requirements defined in paragraph (d) of this section.

Amend Section 23.831 by adding paragraphs (c) and (d) to read as follows:

§23.831 Ventilation.

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(c) For jet pressurized airplanes that operate at altitudes above 41,000 feet, under normal operating conditions and in the event of any probable failure conditions of any system which would adversely affect the ventilating air, the ventilation system must provide reasonable passenger comfort. The ventilation system must also provide a sufficient amount of uncontaminated air to enable the flight crew members to perform their duties without undue discomfort or fatigue. For normal operating conditions, the ventilation system must be designed to provide each occupant with at least 0.55 pounds of fresh air per minute. In the event of the loss of one source of fresh air, the supply of fresh airflow may not be less than 0.4 pounds per minute for any period exceeding five minutes.

(d) For jet pressurized airplanes that operate at altitudes above 41,000 feet, other probable and improbable Environmental Control System failure conditions that adversely affect the passenger and flight crew compartment environmental conditions may not affect flight crew performance so as to result in a hazardous condition, and no occupant shall sustain permanent physiological harm.

Amend Section 23.841 by revising paragraphs (a) and (b)(6), and by adding paragraphs (c) and (d) to read as follows:

§23.841 Pressurized cabins.

(a) If certification for operation above 25,000 feet is requested, the airplane must be able to maintain a cabin pressure altitude of not more than 15,000 feet, in the event of any probable failure condition in the pressurization system. During decompression, the cabin altitude may not exceed 15,000 feet for more than 10 seconds and 25,000 feet for any duration.

(b) * * *

(6) Warning indication at the pilot station to indicate when the safe or preset pressure differential is exceeded and when a cabin pressure altitude of 10,000 feet is exceeded. The 10,000 foot cabin altitude warning may be increased up to 15,000 feet for operations from high altitude airfields (10,000 to 15,000 feet) provided:

(i) The landing or the take off modes (normal or high altitude) are clearly indicated to the flight crew.

(ii) Selection of normal or high altitude airfield mode requires no more than one flight crew action and goes to normal airfield mode at engine stop.

(iii) The pressurization system is designed to ensure cabin altitude does not exceed 10,000 feet when in flight above flight level (FL) 250.

(iv) The pressurization system and cabin altitude warning system is designed to ensure cabin altitude warning at 10,000 feet when in flight above FL250.

* * * * *

(c) If certification for operation above 41,000 feet and not more than 45,000 feet is requested—

(1) The airplane must prevent cabin pressure altitude from exceeding the following after decompression from any probable pressurization system failure in conjunction with any undetected, latent pressurization system failure condition:

(i) If depressurization analysis shows that the cabin altitude does not exceed 25,000 feet, the pressurization system must prevent the cabin altitude from exceeding the cabin altitude-time history shown in Figure 1 of this section.

(ii) Maximum cabin altitude is limited to 30,000 feet. If cabin altitude exceeds 25,000 feet, the maximum time the cabin altitude may exceed 25,000 feet is 2 minutes; time starting when the cabin altitude exceeds 25,000 feet and ending when it returns to 25,000 feet.

(2) The airplane must prevent cabin pressure altitude from exceeding the following after decompression from any single pressurization system failure in conjunction with any probable fuselage damage:

(i) If depressurization analysis shows that the cabin altitude does not exceed 37,000 feet, the pressurization system must prevent the cabin altitude from exceeding the cabin altitude-time history shown in Figure 2 of this section.

(ii) Maximum cabin altitude is limited to 40,000 feet. If cabin altitude exceeds 37,000 feet, the maximum time the cabin altitude may exceed 25,000 feet is 2 minutes; time starting when the cabin altitude exceeds 25,000 feet and ending when it returns to 25,000 feet.

(3) In showing compliance with paragraphs (c)(1) and (c)(2) of this section, it may be assumed that an emergency descent is made by an approved emergency procedure. A 17-second flight crew recognition and reaction time must be applied between cabin altitude warning and the initiation of an emergency descent. Fuselage structure, engine and system failures are to be considered in evaluating the cabin decompression.

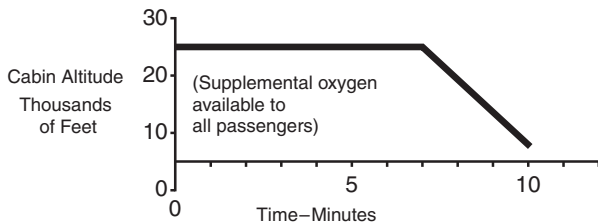


FIGURE 1. Cabin Altitude—Time History

Note: For Figure 1, time starts at the moment cabin altitude exceeds 10,000 feet during decompression.

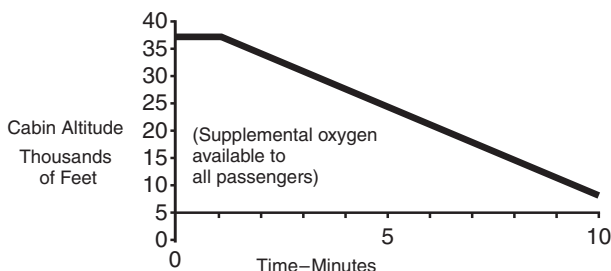


FIGURE 2. Cabin Altitude—Time History

Note: For Figure 2, time starts at the moment cabin altitude exceeds 10,000 feet during decompression.

(d) If certification for operation above 45,000 feet and not more than 51,000 feet is requested—

(1) Pressurized cabins must be equipped to provide a cabin pressure altitude of not more than 8,000 feet at the maximum operating altitude of the airplane under normal operating conditions.

(2) The airplane must prevent cabin pressure altitude from exceeding the following after decompression from any failure condition not shown to be extremely improbable:

(i) Twenty-five thousand (25,000) feet for more than 2 minutes; or

(ii) Forty thousand (40,000) feet for any duration.

(3) Fuselage structure, engine and system failures are to be considered in evaluating the cabin decompression.

(4) In addition to the cabin altitude indicating means in (b)(6) of this section, an aural or visual signal must be provided to warn the flight crew when the cabin pressure altitude exceeds 10,000 feet.

(5) The sensing system and pressure sensors necessary to meet the requirements of (b)(5), (b)(6), and (d)(4) of this section and §23.1447(e), must, in the event of low cabin pressure, actuate the required warning and automatic presentation devices without any delay that would significantly increase the hazards resulting from decompression.

Amend Section 23.853 by revising paragraph (d)(2) to read as follows:

§23.853 Passenger and crew compartment interiors.

* * * * *

(d) ***

(2) Lavatories must have “No Smoking” or “No Smoking in Lavatory” placards located conspicuously on each side of the entry door.

* * * * *

Add a new Section 23.856 to read as follows:

§23.856 Thermal/acoustic insulation materials.

Thermal/acoustic insulation material installed in the fuselage must meet the flame propagation test requirements of part II of Appendix F to this part, or other approved equivalent test requirements. This requirement does not apply to “small parts,” as defined in §23.853(d)(3)(v).

Amend Section 23.903 by adding paragraph (b)(3) to read as follows:

§23.903 Engines.

* * * * *

(b) ***

(3) For engines embedded in the fuselage behind the cabin, the effects of a fan exiting forward of the inlet case (fan disconnect) must be addressed, the passengers must be protected, and the airplane must be controllable to allow for continued safe flight and landing.

* * * * *

Amend Section 23.1165 by revising paragraph (f) to read as follows:

§23.1165 Engine ignition systems.

* * * * *

(f) In addition, for commuter category airplanes, each turbine engine ignition system must be an essential electrical load.

Amend Section 23.1193 by revising paragraph (g) to read as follows:

§23.1193 Cowling and nacelle.

* * * * *

(g) In addition, for all airplanes with engine(s) embedded in the fuselage or in pylons on the aft fuselage, the airplane must be designed so that no fire originating in any engine compartment can enter, either through openings or by burn-through, any other region where it would create additional hazards.

Amend Section 23.1195 by revising the introductory text of paragraph (a) and by revising paragraph (a)(2) to read as follows:

§23.1195 Fire extinguishing systems.

(a) For all airplanes with engine(s) embedded in the fuselage or in pylons on the aft fuselage, fire extinguishing systems must be installed and compliance shown with the following:

* * * * *

(2) The fire extinguishing system, the quantity of the extinguishing agent, the rate of discharge, and the discharge distribution must be adequate to extinguish fires. An individual "one shot" system may be used, except for engine(s) embedded in the fuselage, where a "two shot" system is required.

* * * * *

Amend Section 23.1197 by revising the introductory text to read as follows:

§23.1197 Fire extinguishing agents.

For all airplanes with engine(s) embedded in the fuselage or in pylons on the aft fuselage the following applies:

* * * * *

Amend Section 23.1199 by revising the introductory text to read as follows:

§23.1199 Extinguishing agent containers.

For all airplanes with engine(s) embedded in the fuselage or in pylons on the aft fuselage the following applies:

* * * * *

Amend Section 23.1201 by revising the introductory text to read as follows:

§23.1201 Fire extinguishing systems materials.

For all airplanes with engine(s) embedded in the fuselage or in pylons on the aft fuselage the following applies:

* * * * *

Revise Section 23.1301 by revising paragraphs (b) and (c) and by removing paragraph (d) to read as follows:

§23.1301 Function and installation.

* * * * *

(b) Be labeled as to its identification, function, or operating limitations, or any applicable combination of these factors; and

(c) Be installed according to limitations specified for that equipment.

* * * * *

Amend Section 23.1303 by revising paragraph (c) to read as follows:

§23.1303 Flight and navigation instruments.

* * * * *

(c) A magnetic direction indicator.

* * * * *

Revise Section 23.1309 to read as follows:

§23.1309 Equipment, systems, and installations.

The requirements of this section, except as identified in paragraphs (a) through (d), are applicable, in addition to specific design requirements of part 23, to any equipment or system as installed in the airplane. This section is a regulation of general requirements and does not supersede any requirements contained in another section of part 23.

(a) The airplane equipment and systems must be designed and installed so that:

(1) Those required for type certification or by operating rules perform as intended under the airplane operating and environmental conditions, including the indirect effects of lightning strikes.

(2) Any equipment and system does not adversely affect the safety of the airplane or its occupants, or the proper functioning of those covered by paragraph (a)(1) of this section.

(b) Minor, major, hazardous, or catastrophic failure condition(s), which occur during Type Inspection Authorization or FAA flight-certification testing, must have root cause analysis and corrective action.

(c) The airplane systems and associated components considered separately and in relation to other systems, must be designed and installed so that:

(1) Each catastrophic failure condition is extremely improbable and does not result from a single failure;

(2) Each hazardous failure condition is extremely remote; and

(3) Each major failure condition is remote.

(d) Information concerning an unsafe system operating condition must be provided in a timely manner to the crew to enable them to take appropriate corrective action. An appropriate alert must be provided if immediate pilot awareness and immediate or subsequent corrective action is required. Systems and controls, including indications and annunciations, must be designed to minimize crew errors which could create additional hazards.

Add a new Section 23.1310 to read as follows:

§23.1310 Power source capacity and distribution.

(a) Each installation whose functioning is required for type certification or under operating rules and that requires a power supply is an "essential load" on the power supply. The power sources and the system must be able to supply the following power loads in probable operating combinations and for probable durations:

(1) Loads connected to the system with the system functioning normally.

(2) Essential loads, after failure of any one prime mover, power converter, or energy storage device.

(3) Essential loads after failure of—

(i) Any one engine on two-engine airplanes; and

(ii) Any two engines on airplanes with three or more engines.

(4) Essential loads for which an alternate source of power is required, after any failure or malfunction in any one power supply system, distribution system, or other utilization system.

(b) In determining compliance with paragraphs (a)(2) and (3) of this section, the power loads may be assumed to be reduced under a monitoring procedure consistent with safety in the kinds of operation authorized. Loads not required in controlled flight need not be considered for the two-engine-inoperative condition on airplanes with three or more engines.

Amend Section 23.1311 by revising paragraphs (a)(5), (a)(6), (a)(7), and paragraph (b) to read as follows:

§23.1311 Electronic display instrument systems.

(a) * * *

(5) For certification for Instrument Flight Rules (IFR) operations, have an independent magnetic direction indicator and either an independent secondary mechanical altimeter, airspeed indicator, and attitude instrument or an electronic display parameters for the altitude, airspeed, and attitude that are independent from the airplane's primary electrical power system. These secondary instruments may be installed in panel positions that are displaced from the primary positions specified by §23.1321(d), but must be located where they meet the pilot's visibility requirements of §23.1321(a).

(6) Incorporate sensory cues that provide a quick glance sense of rate and, where appropriate, trend information to the parameter being displayed to the pilot.

(7) Incorporate equivalent visual displays of the instrument markings required by §§23.1541 through 23.1553, or visual displays that alert the pilot to abnormal operational values or approaches to established limitation values, for each parameter required to be displayed by this part.

(b) The electronic display indicators, including their systems and installations, and considering other airplane systems, must be designed so that one display of information essential for continued safe flight and landing will be available within one second to the crew by a single pilot action or by automatic means for continued safe operation, after any single failure or probable combination of failures.

* * * * *

Amend Section 23.1323 by revising paragraph (e) to read as follows:

§23.1323 Airspeed indicating system.

* * * * *

(e) In addition, for normal, utility, and acrobatic category multi-engine jets of more than 6,000 pounds maximum weight and commuter category airplanes, each system must be calibrated to determine the system error during the accelerate-takeoff ground run. The ground run calibration must be determined—

(1) From 0.8 of the minimum value of V_1 to the maximum value of V_2 , considering the approved ranges of altitude and weight; and

(2) The ground run calibration must be determined assuming an engine failure at the minimum value of V_1 .

* * * * *

Amend Section 23.1331 by revising paragraph (c) to read as follows:

§23.1331 Instruments using a power source.

* * * * *

(c) For certification for Instrument Flight Rules (IFR) operations and for the heading, altitude, airspeed, and attitude, there must be at least:

(1) Two independent sources of power (not driven by the same engine on multiengine airplanes), and a manual or an automatic means to select each power source; or

(2) A separate display of parameters for heading, altitude, airspeed, and attitude that has a power source independent from the airplane's primary electrical power system.

Amend Section 23.1353 by revising paragraph (h) to read as follows:

§23.1353 Storage battery design and installation.

* * * * *

(h)(1) In the event of a complete loss of the primary electrical power generating system, the battery must be capable of providing electrical power to those loads that are essential to continued safe flight and landing for:

(i) At least 30 minutes for airplanes that are certificated with a maximum altitude of 25,000 feet or less; and

(ii) At least 60 minutes for airplanes that are certificated with a maximum altitude over 25,000 feet.

(2) The time period includes the time to recognize the loss of generated power and to take appropriate load shedding action.

Amend Section 23.1431, paragraph (a) to read as follows:

§23.1431 Electronic equipment.

(a) In showing compliance with §23.1309(a), (b), and (c) with respect to radio and electronic equipment and their installations, critical environmental conditions must be considered.

* * * * *

Revise Section 23.1443 to read as follows:

§23.1443 Minimum mass flow of supplemental oxygen.

(a) If the airplane is to be certified above 41,000 feet, a continuous flow oxygen system must be provided for each passenger.

(b) If continuous flow oxygen equipment is installed, an applicant must show compliance with the requirements of either paragraphs (b)(1) and (b)(2) or paragraph (b)(3) of this section:

(1) For each passenger, the minimum mass flow of supplemental oxygen required at various cabin pressure altitudes may not be less than the flow required to maintain, during inspiration and while using the oxygen equipment (including masks) provided, the following mean tracheal oxygen partial pressures:

(i) At cabin pressure altitudes above 10,000 feet up to and including 18,500 feet, a mean tracheal oxygen partial pressure of 100mm Hg when breathing 15 liters per minute, Body Temperature, Pressure, Saturated (BTPS) and with a tidal volume of 700cc with a constant time interval between respirations.

(ii) At cabin pressure altitudes above 18,500 feet up to and including 40,000 feet, a mean tracheal oxygen partial pressure of 83.8mm Hg when breathing 30 liters per minute, BTPS, and with a tidal volume of 1,100cc with a constant time interval between respirations.

(2) For each flight crewmember, the minimum mass flow may not be less than the flow required to maintain, during inspiration, a mean tracheal oxygen partial pressure of 149mm Hg when breathing 15 liters per minute, BTPS, and with a maximum tidal volume of 700cc with a constant time interval between respirations.

(3) The minimum mass flow of supplemental oxygen supplied for each user must be at a rate not less than that shown in the following figure for each altitude up to and including the maximum operating altitude of the airplane.

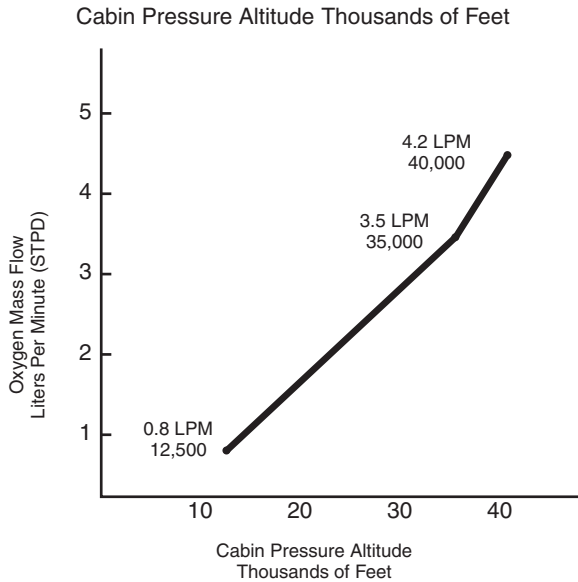


FIGURE 1. Cabin Pressure Altitude

(c) If demand equipment is installed for use by flight crewmembers, the minimum mass flow of supplemental oxygen required for each flight crewmember may not be less than the flow required to maintain, during inspiration, a mean tracheal oxygen partial pressure of 122mm Hg up to and including a cabin pressure altitude of 35,000 feet, and 95 percent oxygen between cabin pressure altitudes of 35,000 and 40,000 feet, when breathing 20 liters per minutes BTPS. In addition, there must be means to allow the flight crew to use undiluted oxygen at their discretion.

(d) If first-aid oxygen equipment is installed, the minimum mass flow of oxygen to each user may not be less than 4 liters per minute, STPD. However, there may be a means to decrease this flow to not less than 2 liters per minute, STPD, at any cabin altitude. The quantity of oxygen required is based upon an average flow rate of 3 liters per minute per person for whom first-aid oxygen is required.

(e) As used in this section:

(1) BTPS means Body Temperature, and Pressure, Saturated (which is 37°C, and the ambient pressure to which the body is exposed, minus 47mm Hg, which is the tracheal pressure displaced by water vapor pressure when the breathed air becomes saturated with water vapor at 37°C).

(2) STPD means Standard, Temperature, and Pressure, Dry (which is 0°C at 760mm Hg with no water vapor).

Amend Section 23.1445 by adding a new paragraph (c) to read as follows:

§23.1445 Oxygen distribution system.

* * * * *

(c) If the flight crew and passengers share a common source of oxygen, a means to separately reserve the minimum supply required by the flight crew must be provided.

Amend Section 23.1447 by adding a new paragraph (g) to read as follows:

§23.1447 Equipment standards for oxygen dispensing units.

* * * * *

(g) If the airplane is to be certified for operation above 41,000 feet, a quick-donning oxygen mask system, with a pressure demand, mask mounted regulator must be provided for the flight crew. This dispensing unit must be immediately available to the flight crew when seated at their station and installed so that it:

(1) Can be placed on the face from its ready position, properly secured, sealed, and supplying oxygen upon demand, with one hand, within five seconds and without disturbing eyeglasses or causing delay in proceeding with emergency duties; and

(2) Allows, while in place, the performance of normal communication functions.

Amend Section 23.1505 by revising paragraph (c) to read as follows:

§23.1505 Airspeed limitations.

* * * * *

(c)(1) Paragraphs (a) and (b) of this section do not apply to turbine airplanes or to airplanes for which a design diving speed V_D/M_D is established under §23.335(b)(4). For those airplanes, a maximum operating limit speed (V_{MO}/M_{MO} airspeed or Mach number, whichever is critical at a particular altitude) must be established as a speed that may not be deliberately exceeded in any regime of flight (climb, cruise, or descent) unless a higher speed is authorized for flight test or pilot training operations.

(2) V_{MO}/M_{MO} must be established so that it is not greater than the design cruising speed V_C/M_C and so that it is sufficiently below V_D/M_D , or V_{DF}/M_{DF} for jets, and the maximum speed shown under §23.251 to make it highly improbable that the latter speeds will be inadvertently exceeded in operations.

(3) The speed margin between V_{MO}/M_{MO} and V_D/M_D , or V_{DF}/M_{DF} for jets, may not be less than that determined under §23.335(b), or the speed margin found necessary in the flight tests conducted under §23.253.

Amend Section 23.1545 by revising paragraph (d) to read as follows:

§23.1545 Airspeed indicator.

* * * * *

(d) Paragraphs (b)(1) through (b)(4) and paragraph (c) of this section do not apply to airplanes for which a maximum operating speed V_{MO}/M_{MO} is established under §23.1505(c). For those airplanes, there must either be a maximum allowable airspeed indication showing the variation of V_{MO}/M_{MO} with altitude or compressibility limitations (as appropriate), or a radial red line marking for V_{MO}/M_{MO} must be made at lowest value of V_{MO}/M_{MO} established for any altitude up to the maximum operating altitude for the airplane.

Amend Section 23.1555 by adding a new paragraph (d)(3) to read as follows:

§23.1555 Control markings.

* * * * *

(d) ***

(3) For fuel systems having a calibrated fuel quantity indication system complying with §23.1337(b)(1) and accurately displaying the actual quantity of usable fuel in each selectable tank, no fuel capacity placards outside of the fuel quantity indicator are required.

* * * * *

Amend Section 23.1559 by adding a new paragraph (d) to read as follows:

§23.1559 Operating limitations placard.

* * * * *

(d) The placard(s) required by this section need not be lighted.

Amend Section 23.1563 by adding a new paragraph (d) to read as follows:

§23.1563 Airspeed placard.

* * * * *

(d) The airspeed placard(s) required by this section need not be lighted if the landing gear operating speed is indicated on the airspeed indicator or other lighted area such as the landing gear control and the airspeed indicator has features such as low speed awareness that provide ample warning prior to V_{MC} .

Amend Section 23.1567 by adding a new paragraph (e) to read as follows:

§23.1567 Flight maneuver placard.

* * * * *

(e) The placard(s) required by this section need not be lighted.

Amend Section 23.1583 as follows:

- A. Revise the introductory text of paragraphs (c)(3) and (c)(4);
- B. Redesignate paragraphs (c)(4)(iii) and (c)(4)(iv) as paragraphs (c)(4)(ii)(A) and (c)(4)(ii)(B); and
- C. Revise paragraph (c)(5) introductory text:

§23.1583 Operating limitations.

* * * * *

(c) ***

(3) For reciprocating engine-powered airplanes of more than 6,000 pounds maximum weight, single-engine turbines, and multiengine jets 6,000 pounds or less maximum weight in the normal, utility, and acrobatic category, performance operating limitations as follows—

* * * * *

(4) For normal, utility, and acrobatic category multiengine jets over 6,000 pounds and commuter category airplanes, the maximum takeoff weight for each airport altitude and ambient temperature within the range selected by the applicant at which—

* * * * *

(5) For normal, utility, and acrobatic category multiengine jets over 6,000 pounds and commuter category airplanes, the maximum landing weight for each airport altitude within the range selected by the applicant at which—

* * * * *

Amend Section 23.1585 by revising paragraph (f) introductory text to read as follows:

§23.1585 Operating procedures.

* * * * *

(f) In addition to paragraphs (a) and (c) of this section, for normal, utility, and acrobatic category multiengine jets weighing over 6,000 pounds, and commuter category airplanes, the information must include the following:

* * * * *

Amend Section 23.1587 by revising paragraph (d) introductory text to read as follows:

§23.1587 Performance information.

* * * * *

(d) In addition to paragraph (a) of this section, for normal, utility, and acrobatic category multiengine jets weighing over 6,000 pounds, and commuter category airplanes, the following information must be furnished—

* * * * *

Amend Appendix F to Part 23 as follows:

- A. Redesignate the existing text as Part I and add a new Part I heading;
- B. Add a new Part II.

APPENDIX F TO PART 23—TEST PROCEDURE

Part I—Acceptable Test Procedure for Self-Extinguishing Materials for Showing Compliance With §§23.853, 23.855, and 23.1359

* * * * *

Part II—Test Method To Determine the Flammability and Flame Propagation Characteristics of Thermal/Acoustic Insulation Materials

Use this test method to evaluate the flammability and flame propagation characteristics of thermal/acoustic insulation when exposed to both a radiant heat source and a flame.

(a) *Definitions.*

Flame propagation means the furthest distance of the propagation of visible flame towards the far end of the test specimen, measured from the midpoint of the ignition source flame. Measure this distance after initially applying the ignition source and before all flame on the test specimen is extinguished. The measurement is not a determination of burn length made after the test.

Radiant heat source means an electric or air propane panel.

Thermal/acoustic insulation means a material or system of materials used to provide thermal and/or acoustic protection. Examples include fiberglass or other batting material encapsulated by a film covering and foams.

Zero point means the point of application of the pilot burner to the test specimen.

(b) *Test apparatus.*

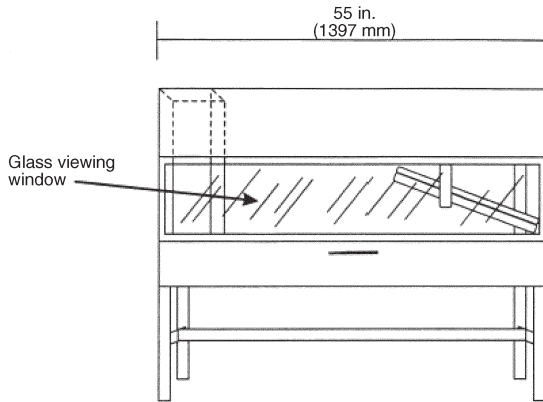


FIGURE F1—Radiant Panel Test Chamber

(1) *Radiant panel test chamber.* Conduct tests in a radiant panel test chamber (see figure F1 above). Place the test chamber under an exhaust hood to facilitate clearing the chamber of smoke after each test. The radiant panel test chamber must be an enclosure 55 inches (1397 mm) long by 19.5 inches (495 mm) deep by 28 inches (710 mm) to 30 inches (maximum) (762 mm) above the test specimen. Insulate the sides, ends, and top with a fibrous ceramic insulation, such as Kaowool MTM board. On the front side, provide a 52 by 12-inch (1321 by 305 mm) draft-free, high-temperature, glass window for viewing the sample during testing. Place a door below the window to provide access to the movable specimen platform holder. The bottom of the test chamber must be a sliding steel platform that has provision for securing the test specimen holder in a fixed and level position. The chamber must have an internal chimney with exterior dimensions of 5.1 inches (129 mm) wide, by 16.2 inches (411 mm) deep by 13 inches (330 mm) high at the opposite end of the chamber from the radiant energy source. The interior dimensions must be 4.5 inches (114 mm) wide by 15.6 inches (395 mm) deep. The chimney must extend to the top of the chamber (see figure F2).

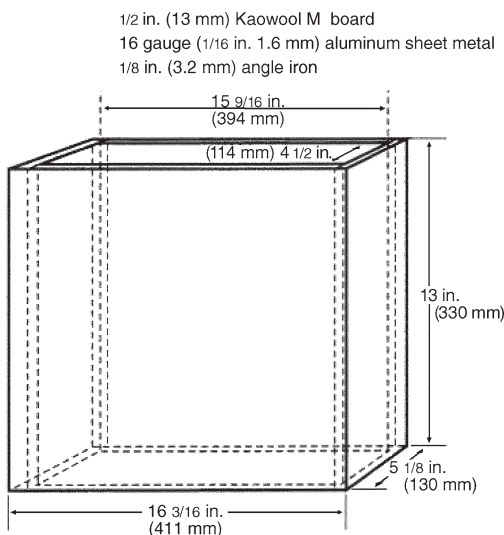


FIGURE F2—Internal Chimney

(2) *Radiant heat source.* Mount the radiant heat energy source in a cast iron frame or equivalent. An electric panel must have six, 3-inch wide emitter strips. The emitter strips must be perpendicular to the length of the panel. The panel must have a radiation surface of 12-7/8 by 18-1/2 inches (327 by 470 mm). The panel must

be capable of operating at temperatures up to 1300°F (704°C). An air propane panel must be made of a porous refractory material and have a radiation surface of 12 by 18 inches (305 by 457 mm). The panel must be capable of operating at temperatures up to 1,500°F (816°C). See figures F3a and F3b.

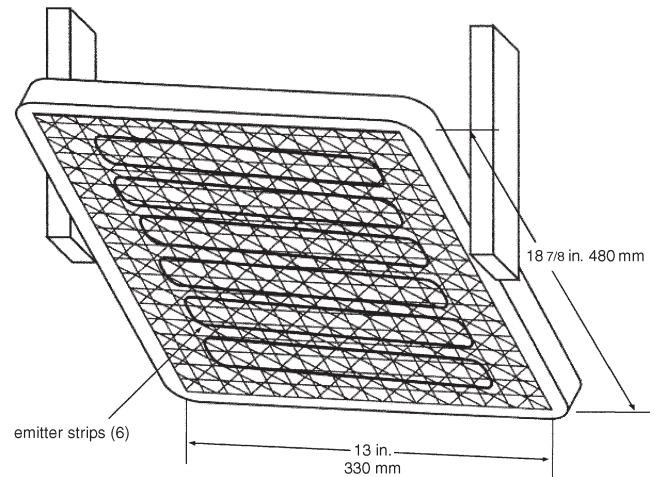


FIGURE F3a—Electric Panel

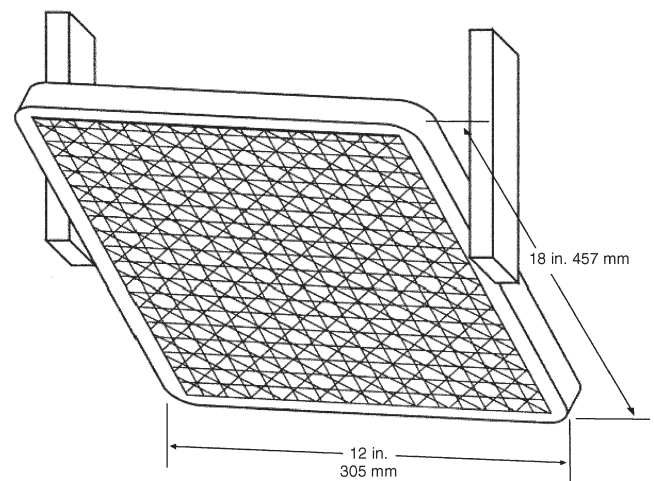


FIGURE F3b—Air Propane Radiant Panel

(i) *Electric radiant panel.* The radiant panel must be 3-phase and operate at 208 volts. A single-phase, 240 volt panel is also acceptable. Use a solid-state power controller and microprocessor-based controller to set the electric panel operating parameters.

(ii) *Gas radiant panel.* Use propane (liquid petroleum gas—2.1 UN 1075) for the radiant panel fuel. The panel fuel system must consist of a venturi-type aspirator for mixing gas and air at approximately atmospheric pressure. Provide suitable instrumentation for monitoring and controlling the flow of fuel and air to the panel. Include an air flow gauge, an air flow regulator, and a gas pressure gauge.

(iii) *Radiant panel placement.* Mount the panel in the chamber at 30 degrees to the horizontal specimen plane, and 7-1/2 inches above the zero point of the specimen.

(3) *Specimen holding system.*

(i) The sliding platform serves as the housing for test specimen placement. Brackets may be attached (via wing nuts) to the top

lip of the platform in order to accommodate various thicknesses of test specimens. Place the test specimens on a sheet of Kaowool MTM board or 1260 Standard Board (manufactured by Thermal Ceramics and available in Europe), or equivalent, either resting on the bottom lip of the sliding platform or on the base of the brackets. It may be necessary to use multiple sheets of material based on the thickness of the test specimen (to meet the sample height requirement). Typically, these non-combustible sheets of material are available in 1/4-inch (6 mm) thicknesses. See figure F4. A sliding platform that is deeper than the 2-inch (50.8mm) platform shown in figure F4 is also acceptable as long as the sample height requirement is met.

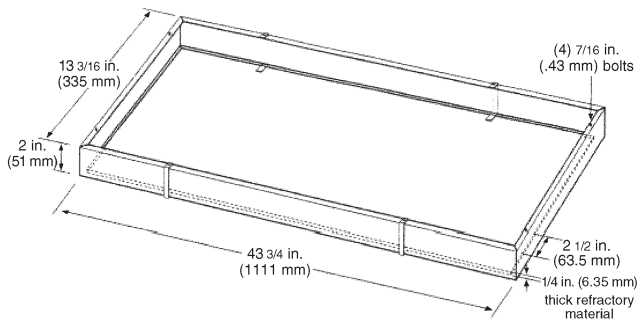


FIGURE F4—Sliding Platform

(ii) Attach a 1/2-inch (13 mm) piece of Kaowool MTM board or other high temperature material measuring 41-1/2 by 8-1/4 inches (1054 by 210 mm) to the back of the platform. This board serves as a heat retainer and protects the test specimen from excessive preheating. The height of this board may not impede the sliding platform movement (in and out of the test chamber). If the platform has been fabricated such that the back side of the platform is high enough to prevent excess preheating of the specimen when the sliding platform is out, a retainer board is not necessary.

(iii) Place the test specimen horizontally on the non-combustible board(s). Place a steel retaining/securing frame fabricated of mild steel, having a thickness of 1/8-inch (3.2 mm) and overall dimensions of 23 by 13-1/8 inches (584 by 333 mm) with a specimen opening of 19 by 10-3/4 inches (483 by 273 mm) over the test specimen. The front, back, and right portions of the top flange of the frame must rest on the top of the sliding platform, and the bottom flanges must pinch all 4 sides of the test specimen. The right bottom flange must be flush with the sliding platform. See figure F5.

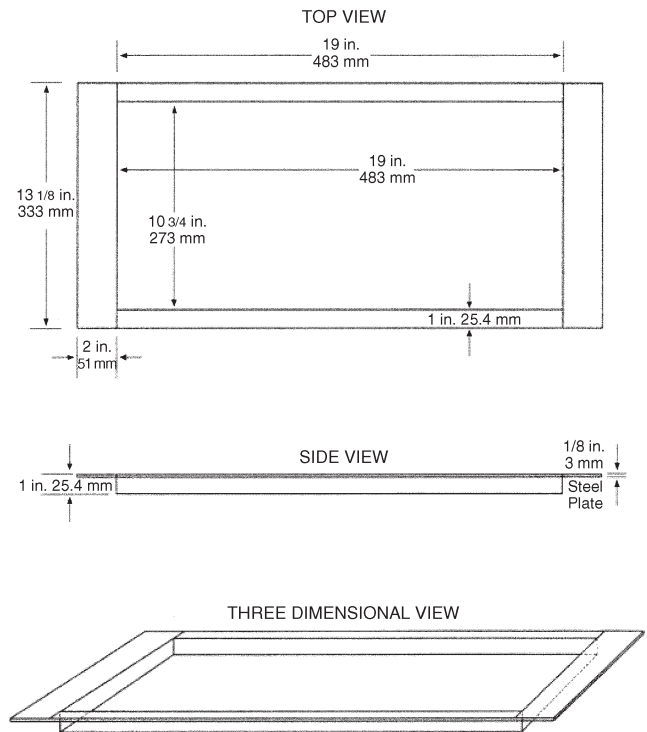


FIGURE F5—3 Views

(4) *Pilot Burner.* The pilot burner used to ignite the specimen must be a Bernzomatic™ commercial propane venturi torch with an axially symmetric burner tip and a propane supply tube with an orifice diameter of 0.006 inches (0.15 mm). The length of the burner tube must be 2-7/8 inches (71 mm). The propane flow must be adjusted via gas pressure through an in-line regulator to produce a blue inner cone length of 3/4-inch (19 mm). A 3/4-inch (19 mm) guide (such as a thin strip of metal) may be soldered to the top of the burner to aid in setting the flame height. The overall flame length must be approximately 5 inches long (127 mm). Provide a way to move the burner out of the ignition position so that the flame is horizontal and at least 2 inches (50 mm) above the specimen plane. See figure F6.

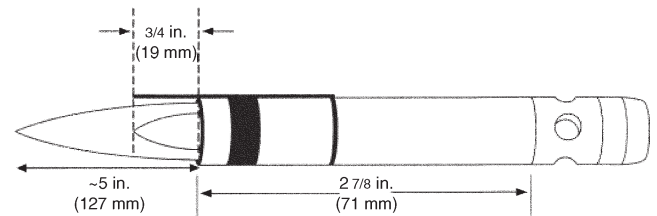


FIGURE F6—Propane Pilot Burner

(5) *Thermocouples.* Install a 24 American Wire Gauge (AWG) Type K (Chromel-Alumel) thermocouple in the test chamber for temperature monitoring. Insert it into the chamber through a small hole drilled through the back of the chamber. Place the thermocouple so that it extends 11 inches (279 mm) out from the back of the chamber wall, 11-1/2 inches (292 mm) from the right side of the chamber wall, and is 2 inches (51 mm) below the radiant panel. The use of other thermocouples is optional.

(6) *Calorimeter.* The calorimeter must be a one-inch cylindrical water-cooled, total heat flux density, foil type Gardon Gage that has a range of 0 to 5 BTU/ft²-second (0 to 5.7 Watts/cm²).

(7) *Calorimeter calibration specification and procedure.*

(i) *Calorimeter specification.*

(A) Foil diameter must be 0.25 +/-0.005 inches (6.35 +/-0.13 mm).

(B) Foil thickness must be 0.0005 +/-0.0001 inches (0.013 +/-0.0025 mm).

(C) Foil material must be thermocouple grade Constantan.

(D) Temperature measurement must be a Copper Constantan thermocouple.

(E) The copper center wire diameter must be 0.0005 inches (0.013 mm).

(F) The entire face of the calorimeter must be lightly coated with "Black Velvet" paint having an emissivity of 96 or greater.

(ii) *Calorimeter calibration.*

(A) The calibration method must be by comparison to a like standardized transducer.

(B) The standardized transducer must meet the specifications given in paragraph II(b)(6) of this appendix.

(C) Calibrate the standard transducer against a primary standard traceable to the National Institute of Standards and Technology (NIST).

(D) The method of transfer must be a heated graphite plate.

(E) The graphite plate must be electrically heated, have a clear surface area on each side of the plate of at least 2 by 2 inches (51 by 51 mm), and be 1/8-inch +/- 1/16-inch thick (3.2 +/- 1.6 mm).

(F) Center the 2 transducers on opposite sides of the plates at equal distances from the plate.

(G) The distance of the calorimeter to the plate must be no less than 0.0625 inches (1.6 mm), and no greater than 0.375 inches (9.5 mm).

(H) The range used in calibration must be at least 0–3.5 BTUs/ft²-second (0–3.9 Watts/cm²) and no greater than 0–5.7 BTUs/ft²-second (0–6.4 Watts/cm²).

(I) The recording device used must record the 2 transducers simultaneously or at least within 1/10 of each other.

(8) *Calorimeter fixture.* With the sliding platform pulled out of the chamber, install the calorimeter holding frame and place a sheet of non-combustible material in the bottom of the sliding platform adjacent to the holding frame. This will prevent heat losses during calibration. The frame must be 13-1/8 inches (333 mm) deep (front to back) by 8 inches (203 mm) wide and must rest on the top of the sliding platform. It must be fabricated of 1/8-inch (3.2 mm) flat stock steel and have an opening that accommodates a 1/2-inch (12.7 mm) thick piece of refractory board, which is level with the top of the sliding platform. The board must have three 1-inch (25.4 mm) diameter holes drilled through the board for calorimeter insertion. The distance to the radiant panel surface from the centerline of the first hole ("zero" position) must be 7-1/2 +/- 1/8-inches (191 +/- 3 mm). The distance between the centerline of the first hole to the centerline of the second hole must be 2 inches (51 mm). It must also be the same distance from the centerline of the second hole to the centerline of the third hole. See figure F7. A calorimeter holding frame that differs in construction is acceptable as long as the height from the centerline of the first hole to the radiant panel and the distance between holes is the same as described in this paragraph.

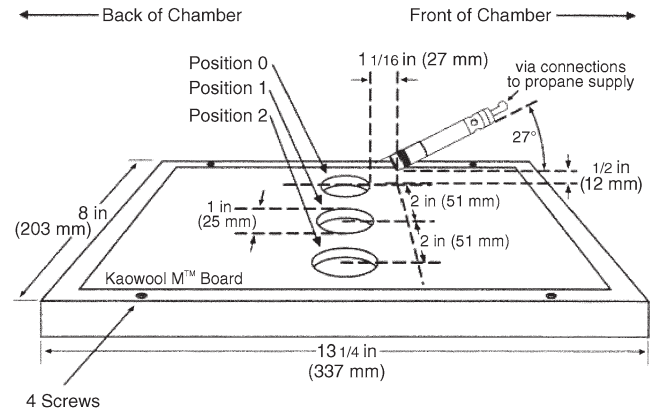


FIGURE F7—Calorimeter Holding Frame

(9) *Instrumentation.* Provide a calibrated recording device with an appropriate range or a computerized data acquisition system to measure and record the outputs of the calorimeter and the thermocouple. The data acquisition system must be capable of recording the calorimeter output every second during calibration.

(10) *Timing device.* Provide a stopwatch or other device, accurate to +/-1 second/hour, to measure the time of application of the pilot burner flame.

(c) *Test specimens.*

(1) *Specimen preparation.* Prepare and test a minimum of three test specimens. If an oriented film cover material is used, prepare and test both the warp and fill directions.

(2) *Construction.* Test specimens must include all materials used in construction of the insulation (including batting, film, scrim, tape, etc.). Cut a piece of core material such as foam or fiberglass, and cut a piece of film cover material (if used) large enough to cover the core material. Heat sealing is the preferred method of preparing fiberglass samples, since they can be made without compressing the fiberglass ("box sample"). Cover materials that are not heat sealable may be stapled, sewn, or taped as long as the cover material is sufficiently over-cut to be drawn down the sides without compressing the core material. The fastening means should be as continuous as possible along the length of the seams. The specimen thickness must be of the same thickness as installed in the airplane.

(3) *Specimen Dimensions.* To facilitate proper placement of specimens in the sliding platform housing, cut non-rigid core materials, such as fiberglass, 12-1/2 inches (318mm) wide by 23 inches (584mm) long. Cut rigid materials, such as foam, 11-1/2 +/- 1/4 inches (292 mm +/- 6mm) wide by 23 inches (584mm) long in order to fit properly in the sliding platform housing and provide a flat, exposed surface equal to the opening in the housing.

(d) *Specimen conditioning.* Condition the test specimens at 70 +/- 5°F (21 +/- 2°C) and 55 percent +/- 10 percent relative humidity, for a minimum of 24 hours prior to testing.

(e) *Apparatus Calibration.*

(1) With the sliding platform out of the chamber, install the calorimeter holding frame. Push the platform back into the chamber and insert the calorimeter into the first hole ("zero" position). See figure F7. Close the bottom door located below the sliding platform. The distance from the centerline of the calorimeter to the radiant panel surface at this point must be 7-1/2 inches +/- 1/8 (191 mm +/- 3). Before igniting the radiant panel, ensure that the calorimeter face is clean and that there is water running through the calorimeter.

(2) Ignite the panel. Adjust the fuel/air mixture to achieve 1.5 BTUs/foot²-second \pm 5 percent (1.7 Watts/cm² \pm 5 percent) at the “zero” position. If using an electric panel, set the power controller to achieve the proper heat flux. Allow the unit to reach steady state (this may take up to 1 hour). The pilot burner must be off and in the down position during this time.

(3) After steady-state conditions have been reached, move the calorimeter 2 inches (51 mm) from the “zero” position (first hole) to position 1 and record the heat flux. Move the calorimeter to position 2 and record the heat flux. Allow enough time at each position for the calorimeter to stabilize. Table 1 depicts typical calibration values at the three positions.

TABLE 1—CALIBRATION TABLE

Position	BTU/foot ² sec	Watts/cm ²
“Zero” Position	1.5	1.7
Position 1	1.51–1.50–1.49	1.71–1.70–1.69
Position 2	1.43–1.44	1.62–1.63

(4) Open the bottom door, remove the calorimeter and holder fixture. Use caution as the fixture is very hot.

(f) Test Procedure.

(1) Ignite the pilot burner. Ensure that it is at least 2 inches (51 mm) above the top of the platform. The burner may not contact the specimen until the test begins.

(2) Place the test specimen in the sliding platform holder. Ensure that the test sample surface is level with the top of the platform. At “zero” point, the specimen surface must be 7-1/2 inches \pm 1/8 inch (191 mm \pm 3) below the radiant panel.

(3) Place the retaining/securing frame over the test specimen. It may be necessary (due to compression) to adjust the sample (up or down) in order to maintain the distance from the sample to the radiant panel (7-1/2 inches \pm 1/8 inch (191 mm \pm 3) at “zero” position). With film/fiberglass assemblies, it is critical to make a slit in the film cover to purge any air inside. This allows the operator to maintain the proper test specimen position (level with the top of the platform) and to allow ventilation of gases during testing. A longitudinal slit, approximately 2 inches (51mm) in length, must be centered 3 inches \pm 1/2 inch (76mm \pm 13mm) from the left flange of the securing frame. A utility knife is acceptable for slitting the film cover.

(4) Immediately push the sliding platform into the chamber and close the bottom door.

(5) Bring the pilot burner flame into contact with the center of the specimen at the “zero” point and simultaneously start the timer. The pilot burner must be at a 27 degree angle with the sample and be approximately 1/2 inch (12 mm) above the sample. See figure F7. A stop, as shown in figure F8, allows the operator to position the burner correctly each time.

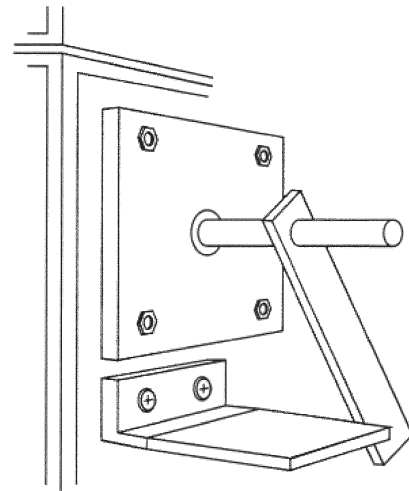


FIGURE F8—Propane Burner Stop

(6) Leave the burner in position for 15 seconds and then remove to a position at least 2 inches (51 mm) above the specimen.

(g) Report.

(1) Identify and describe the test specimen.

(2) Report any shrinkage or melting of the test specimen.

(3) Report the flame propagation distance. If this distance is less than 2 inches, report this as a pass (no measurement required).

(4) Report the after-flame time.

(h) Requirements.

(1) There must be no flame propagation beyond 2 inches (51 mm) to the left of the centerline of the pilot flame application.

(2) The flame time after removal of the pilot burner may not exceed 3 seconds on any specimen.

**PART 27
AIRWORTHINESS STANDARDS:
NORMAL CATEGORY ROTORCRAFT**

► **Change Date:** December 1, 2011

► **Effective Date:** January 30, 2012

Affected parties, however, are not required to comply with the information collection requirement in §§27.573 and 29.573 until the Office of Management and Budget (OMB) approves the collection and assigns a control number under the Paperwork Reduction Act of 1995. The FAA will publish in the Federal Register a notice of the control number assigned by the Office of Management and Budget (OMB) for this information collection requirement.

► **Source:** Amdt. 27–47, 76 FR 74663, Amdt. 27–47A, 77 FR 4891

Add Section 27.573 to read as follows:

§27.573 Damage tolerance and fatigue evaluation of composite rotorcraft structures.

(a) Each applicant must evaluate the composite rotorcraft structure under the damage tolerance standards of paragraph (d) of this section unless the applicant establishes that a damage tolerance evaluation is impractical within the limits of geometry, inspectability, and good design practice. If an applicant establishes that it is impractical within the limits of geometry, inspectability, and good design practice, the applicant must do a fatigue evaluation in accordance with paragraph (e) of this section.

(b) The methodology used to establish compliance with this section must be submitted to and approved by the Administrator.

(c) Definitions:

(1) *Catastrophic failure* is an event that could prevent continued safe flight and landing.

(2) *Principal Structural Elements (PSEs)* are structural elements that contribute significantly to the carrying of flight or ground loads, the failure of which could result in catastrophic failure of the rotorcraft.

(3) *Threat Assessment* is an assessment that specifies the locations, types, and sizes of damage, considering fatigue, environmental effects, intrinsic and discrete flaws, and impact or other accidental damage (including the discrete source of the accidental damage) that may occur during manufacture or operation.

(d) Damage Tolerance Evaluation:

(1) Each applicant must show that catastrophic failure due to static and fatigue loads, considering the intrinsic or discrete manufacturing defects or accidental damage, is avoided throughout the operational life or prescribed inspection intervals of the rotorcraft by performing damage tolerance evaluations of the strength of composite PSEs and other parts, detail design points, and fabrication techniques. Each applicant must account for the effects of material and process variability along with environmental conditions in the strength and fatigue evaluations. Each applicant must evaluate parts that include PSEs of the airframe, main and tail rotor drive systems, main and tail rotor blades and hubs, rotor controls, fixed and movable control surfaces, engine and transmission mountings, landing gear, other parts, detail design points, and fabrication techniques deemed critical by the FAA. Each damage tolerance evaluation must include:

(i) The identification of all PSEs;

(ii) In-flight and ground measurements for determining the loads or stresses for all PSEs for all critical conditions throughout the range of limits in §27.309 (including altitude effects), except that maneuvering load factors need not exceed the maximum values expected in service;

(iii) The loading spectra as severe as those expected in service based on loads or stresses determined under paragraph (d)(1)(ii) of this section, including external load operations, if applicable, and other operations including high-torque events;

(iv) A threat assessment for all PSEs that specifies the locations, types, and sizes of damage, considering fatigue, environmental effects, intrinsic and discrete flaws, and impact or other accidental damage (including the discrete source of the accidental damage) that may occur during manufacture or operation; and

(v) An assessment of the residual strength and fatigue characteristics of all PSEs that supports the replacement times and inspection intervals established under paragraph (d)(2) of this section.

(2) Each applicant must establish replacement times, inspections, or other procedures for all PSEs to require the repair or replacement of damaged parts before a catastrophic failure. These replacement times, inspections, or other procedures must be included in the Airworthiness Limitations Section of the Instructions for Continued Airworthiness required by §27.1529.

(i) Replacement times for PSEs must be determined by tests, or by analysis supported by tests, and must show that the structure is able to withstand the repeated loads of variable magnitude expected in-service. In establishing these replacement times, the following items must be considered:

(A) Damage identified in the threat assessment required by paragraph (d)(1)(iv) of this section;

(B) Maximum acceptable manufacturing defects and in-service damage (i.e., those that do not lower the residual strength below ultimate design loads and those that can be repaired to restore ultimate strength); and

(C) Ultimate load strength capability after applying repeated loads.

(ii) Inspection intervals for PSEs must be established to reveal any damage identified in the threat assessment required by paragraph (d)(1)(iv) of this section that may occur from fatigue or other in-service causes before such damage has grown to the extent that the component cannot sustain the required residual strength capability. In establishing these inspection intervals, the following items must be considered:

(A) The growth rate, including no-growth, of the damage under the repeated loads expected in-service determined by tests or analysis supported by tests;

(B) The required residual strength for the assumed damage established after considering the damage type, inspection interval, detectability of damage, and the techniques adopted for damage detection. The minimum required residual strength is limit load; and

(C) Whether the inspection will detect the damage growth before the minimum residual strength is reached and restored to ultimate load capability, or whether the component will require replacement.

(3) Each applicant must consider the effects of damage on stiffness, dynamic behavior, loads, and functional performance on all PSEs when substantiating the maximum assumed damage size and inspection interval.

(e) Fatigue Evaluation: If an applicant establishes that the damage tolerance evaluation described in paragraph (d) of this section is impractical within the limits of geometry, inspectability, or good design practice, the applicant must do a fatigue evaluation of the particular composite rotorcraft structure and:

(1) Identify all PSEs considered in the fatigue evaluation;

(2) Identify the types of damage for all PSEs considered in the fatigue evaluation;

(3) Establish supplemental procedures to minimize the risk of catastrophic failure associated with the damages identified in paragraph (d) of this section; and

(4) Include these supplemental procedures in the Airworthiness Limitations section of the Instructions for Continued Airworthiness required by §27.1529.

Amend the second sentence of section A.27.4 of Appendix A to Part 27 by removing the phrase “approved under §27.571” and adding the phrase “required for type certification” in its place.

PART 33

AIRWORTHINESS STANDARDS: AIRCRAFT ENGINES

- **Change Date:** April 13, 2012
- **Effective Date:** April 13, 2012
- **Source:** Amdt. 33–32, 77 FR 22187

Amend Section 33.87 as follows:

- Remove the word “Administrator” from paragraphs (a)(1) and (b)(1) and add the word “FAA” in its place.
- Remove the word “manufacturer” from paragraphs (b)(1), (c)(1), (d)(1), and (e)(1) wherever it appears and add the word “applicant” in its place.
- Remove the phrase “power and thrust” from paragraphs (b)(1), (b)(2) heading, (b)(2)(i), (b)(2)(ii), (b)(3), (b)(4) and (b)(5) wherever it appears and add the phrase “power or thrust” in its place.
- Remove the phrase “rotor speed, power, and thrust” from paragraph (b)(1) and add the phrase “rotor speed and power or thrust” in its place.
- Remove the word “poition” from paragraph (b)(5) and add the word “position” in its place.
- Remove the phrase “(c)(5)” from paragraph (c)(1) and add the phrase “(c)(6)” in its place.
- Remove the phrase “(c)(5)” from paragraph (d)(1) and add the phrase “(d)(6)” in its place.
- Remove the phrase “(d)(6) of this section” from paragraph (e)(1) and add the phrase “(b)(5), (c)(6), or (d)(6) of this section, as applicable” in its place.
- Remove the phrase “(c)(2) through (c)(6)” from paragraph (e)(2) and add the phrase “(c)(2) through (c)(7)” in its place.
- Remove the phrase “paragraph (c)(2)” from paragraph (e)(2) and add the phrase “paragraph (c)(4)” in its place.

PART 91

GENERAL OPERATING AND FLIGHT RULES

- **Change Date:** August 31, 2011
- **Effective Date:** October 31, 2011
- **Source:** Amdt. 91–324, 76 FR 54107

Amend Section 91.109 as follows:

- Revise paragraph (a) introductory text;
- Redesignating paragraphs (b) and (c) as paragraphs (c) and (d), respectively;
- Add new paragraph (b).

The revision and addition read as follows:

§91.109 Flight instruction; simulated instrument flight and certain flight tests.

(a) No person may operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has fully functioning dual controls. However, instrument flight instruction may be given in an airplane that is equipped with a single, functioning throwover control wheel that controls the elevator and ailerons, in place of fixed, dual controls, when—

* * * * *

(b) An airplane equipped with a single, functioning throwover control wheel that controls the elevator and ailerons, in place of

fixed, dual controls may be used for flight instruction to conduct a flight review required by §61.56 of this chapter, or to obtain recent flight experience or an instrument proficiency check required by §61.57 when—

- The airplane is equipped with operable rudder pedals at both pilot stations;
- The pilot manipulating the controls is qualified to serve and serves as pilot in command during the entire flight;
- The instructor is current and qualified to serve as pilot in command of the airplane, meets the requirements of §61.195(b), and has logged at least 25 hours of pilot-in-command flight time in the make and model of airplane; and
- The pilot in command and the instructor have determined the flight can be conducted safely.

* * * * *

- **Change Date:** July 6, 2011
- **Effective Date:** August 5, 2011
- **Source:** Amdt. 91–323, 76 FR 39259

Amend Section 91.417 by revising paragraph (a)(2)(vi) to read as follows:

§91.417 Maintenance records.

(a) * * *

(2) * * *

(vi) Copies of the forms prescribed by §43.9(d) of this chapter for each major alteration to the airframe and currently installed engines, rotors, propellers, and appliances.

* * * * *

- **Change Date:** August 22, 2011
- **Effective Date:** October 21, 2011
- **Source:** Amdt. 91–325, 76 FR 52235

Add Section 91.1050 to read as follows:

§91.1050 Employment of former FAA employees.

(a) Except as specified in paragraph (c) of this section, no fractional owner or fractional ownership program manager may knowingly employ or make a contractual arrangement which permits an individual to act as an agent or representative of the fractional owner or fractional ownership program manager in any matter before the Federal Aviation Administration if the individual, in the preceding 2 years—

- Served as, or was directly responsible for the oversight of, a Flight Standards Service aviation safety inspector; and
- Had direct responsibility to inspect, or oversee the inspection of, the operations of the fractional owner or fractional ownership program manager.

(b) For the purpose of this section, an individual shall be considered to be acting as an agent or representative of a fractional owner or fractional ownership program manager in a matter before the agency if the individual makes any written or oral communication on behalf of the fractional owner or fractional ownership program manager to the agency (or any of its officers or employees) in connection with a particular matter, whether or not involving a specific party and without regard to whether the individual has participated in, or had responsibility for, the particular matter while serving as a Flight Standards Service aviation safety inspector.

(c) The provisions of this section do not prohibit a fractional owner or fractional ownership program manager from knowingly employing or making a contractual arrangement which permits an individual to act as an agent or representative of the fractional

owner or fractional ownership program manager in any matter before the Federal Aviation Administration if the individual was employed by the fractional owner or fractional ownership program manager before October 21, 2011.

PART 119

CERTIFICATION: AIR CARRIERS AND COMMERCIAL OPERATORS

- **Change Date:** January 4, 2012
- **Effective Date:** January 14, 2014
- **Source:** Amdt. 119–16, 77 FR 402

In Section 119.55, revise paragraph (a) to read as follows:

§119.55 Obtaining deviation authority to perform operations under a U.S. military contract.

(a) The Administrator may authorize a certificate holder that is authorized to conduct supplemental or on-demand operations to deviate from the applicable requirements of this part, part 117, part 121, or part 135 of this chapter in order to perform operations under a U.S. military contract.

* * * * *

- **Change Date:** August 22, 2011
- **Effective Date:** October 21, 2011
- **Source:** Amdt. 119–15, 76 FR 52235

Add Section 119.73 to read as follows:

§119.73 Employment of former FAA employees.

(a) Except as specified in paragraph (c) of this section, no certificate holder conducting operations under part 121 or 135 of this chapter may knowingly employ or make a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual, in the preceding 2 years—

- (1) Served as, or was directly responsible for the oversight of, a Flight Standards Service aviation safety inspector; and
- (2) Had direct responsibility to inspect, or oversee the inspection of, the operations of the certificate holder.

(b) For the purpose of this section, an individual shall be considered to be acting as an agent or representative of a certificate holder in a matter before the agency if the individual makes any written or oral communication on behalf of the certificate holder to the agency (or any of its officers or employees) in connection with a particular matter, whether or not involving a specific party and without regard to whether the individual has participated in, or had responsibility for, the particular matter while serving as a Flight Standards Service aviation safety inspector.

(c) The provisions of this section do not prohibit a certificate holder from knowingly employing or making a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual was employed by the certificate holder before October 21, 2011.

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

- **Change Date:** August 22, 2011
- **Effective Date:** October 21, 2011
- **Source:** Amdt. 125–61, 76 FR 52235

Add Section 125.26 to read as follows:

§125.26 Employment of former FAA employees.

(a) Except as specified in paragraph (c) of this section, no certificate holder may knowingly employ or make a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual, in the preceding 2 years—

- (1) Served as, or was directly responsible for the oversight of, a Flight Standards Service aviation safety inspector; and
- (2) Had direct responsibility to inspect, or oversee the inspection of, the operations of the certificate holder.

(b) For the purpose of this section, an individual shall be considered to be acting as an agent or representative of a certificate holder in a matter before the agency if the individual makes any written or oral communication on behalf of the certificate holder to the agency (or any of its officers or employees) in connection with a particular matter, whether or not involving a specific party and without regard to whether the individual has participated in, or had responsibility for, the particular matter while serving as a Flight Standards Service aviation safety inspector.

(c) The provisions of this section do not prohibit a certificate holder from knowingly employing or making a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual was employed by the certificate holder before October 21, 2011.

PART 135

OPERATING REQUIREMENTS: COMMUTER AND ON DEMAND OPERATIONS AND RULES GOVERNING PERSONS ON BOARD SUCH AIRCRAFT

- **Change Date:** January 11, 2012
- **Effective Date:** February 27, 2012
- **Source:** Amdt. 135–126, 77 FR 1632

Amend Section 135.225 by revising paragraph (f) introductory text to read as follows:

§135.225 IFR: Takeoff, approach and landing minimums.

* * * * *

(f) Each pilot making an IFR takeoff or approach and landing at a military or foreign airport shall comply with applicable instrument approach procedures and weather minimums prescribed by the authority having jurisdiction over that airport. In addition, unless authorized by the certificate holder's operations specifications, no pilot may, at that airport—

* * * * *

PART 145
REPAIR STATIONS

- **Change Date:** August 22, 2011
- **Effective Date:** October 21, 2011
- **Source:** Amdt. 145–29, 76 FR 52237

Add Section 145.160 to read as follows:

§145.160 Employment of former FAA employees.

(a) Except as specified in paragraph (c) of this section, no holder of a repair station certificate may knowingly employ or make a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual, in the preceding 2 years—

(1) Served as, or was directly responsible for the oversight of, a Flight Standards Service aviation safety inspector; and

(2) Had direct responsibility to inspect, or oversee the inspection of, the operations of the certificate holder.

(b) For the purpose of this section, an individual shall be considered to be acting as an agent or representative of a certificate holder in a matter before the agency if the individual makes any written or oral communication on behalf of the certificate holder to the agency (or any of its officers or employees) in connection with a particular matter, whether or not involving a specific party and without regard to whether the individual has participated in, or had responsibility for, the particular matter while serving as a Flight Standards Service aviation safety inspector.

(c) The provisions of this section do not prohibit a holder of a repair station certificate from knowingly employing or making a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual was employed by the certificate holder before October 21, 2011.

PART 147
AVIATION MAINTENANCE TECHNICIAN SCHOOLS

- **Change Date:** August 22, 2011
- **Effective Date:** October 21, 2011
- **Source:** Amdt. 147–71, 76 FR 52237

Add Section 147.8 to subpart A to read as follows:

§147.8 Employment of former FAA employees.

(a) Except as specified in paragraph (c) of this section, no holder of an aviation maintenance technician certificate may knowingly employ or make a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual, in the preceding 2 years—

(1) Served as, or was directly responsible for the oversight of, a Flight Standards Service aviation safety inspector; and

(2) Had direct responsibility to inspect, or oversee the inspection of, the operations of the certificate holder.

(b) For the purpose of this section, an individual shall be considered to be acting as an agent or representative of a certificate holder in a matter before the agency if the individual makes any written or oral communication on behalf of the certificate holder to the agency (or any of its officers or employees) in connection with a particular matter, whether or not involving a specific party and without regard to whether the individual has participated in, or had responsibility for, the particular matter while serving as a Flight Standards Service aviation safety inspector.

(c) The provisions of this section do not prohibit a holder of an aviation maintenance technician school certificate from knowingly employing or making a contractual arrangement which permits an individual to act as an agent or representative of the certificate holder in any matter before the Federal Aviation Administration if the individual was employed by the certificate holder before October 21, 2011.