

(p) *Types of surface.* A statement of the types of surface on which operations may be conducted. (See § 23.45(g) and § 23.1587 (a)(4), (c)(2), and (d)(4)).

[Doc. No. 4080, 29 FR 17955, Dec. 18, 1964, as amended by Amdt. 23-7, 34 FR 13097, Aug. 13, 1969; Amdt. 23-10, 36 FR 2864, Feb. 11, 1971; Amdt. 23-21, 43 FR 2320, Jan. 16, 1978; Amdt. 23-23, 43 FR 50594, Oct. 30, 1978; Amdt. 23-34, 52 FR 1834, Jan. 15, 1987; Amdt. 23-45, 58 FR 42166, Aug. 6, 1993; Amdt. 23-50, 61 FR 5193, Feb. 9, 1996]

**§ 23.1585 Operating procedures.**

(a) For all airplanes, information concerning normal, abnormal (if applicable), and emergency procedures and other pertinent information necessary for safe operation and the achievement of the scheduled performance must be furnished, including—

(1) An explanation of significant or unusual flight or ground handling characteristics;

(2) The maximum demonstrated values of crosswind for takeoff and landing, and procedures and information pertinent to operations in crosswinds;

(3) A recommended speed for flight in rough air. This speed must be chosen to protect against the occurrence, as a result of gusts, of structural damage to the airplane and loss of control (for example, stalling);

(4) Procedures for restarting any turbine engine in flight, including the effects of altitude; and

(5) Procedures, speeds, and configuration(s) for making a normal approach and landing, in accordance with §§ 23.73 and 23.75, and a transition to the balked landing condition.

(6) For seaplanes and amphibians, water handling procedures and the demonstrated wave height.

(b) In addition to paragraph (a) of this section, for all single-engine airplanes, the procedures, speeds, and configuration(s) for a glide following engine failure, in accordance with § 23.71 and the subsequent forced landing, must be furnished.

(c) In addition to paragraph (a) of this section, for all multiengine airplanes, the following information must be furnished:

(1) Procedures, speeds, and configuration(s) for making an approach and landing with one engine inoperative;

(2) Procedures, speeds, and configuration(s) for making a balked landing with one engine inoperative and the conditions under which a balked landing can be performed safely, or a warning against attempting a balked landing;

(3) The  $V_{SSE}$  determined in § 23.149; and

(4) Procedures for restarting any engine in flight including the effects of altitude.

(d) In addition to paragraphs (a) and either (b) or (c) of this section, as appropriate, for all normal, utility, and acrobatic category airplanes, the following information must be furnished:

(1) Procedures, speeds, and configuration(s) for making a normal takeoff, in accordance with § 23.51 (a) and (b), and § 23.53 (a) and (b), and the subsequent climb, in accordance with § 23.65 and § 23.69(a).

(2) Procedures for abandoning a takeoff due to engine failure or other cause.

(e) In addition to paragraphs (a), (c), and (d) of this section, for all normal, utility, and acrobatic category multi-engine airplanes, the information must include the following:

(1) Procedures and speeds for continuing a takeoff following engine failure and the conditions under which takeoff can safely be continued, or a warning against attempting to continue the takeoff.

(2) Procedures, speeds, and configurations for continuing a climb following engine failure, after takeoff, in accordance with § 23.67, or enroute, in accordance with § 23.69(b).

(f) In addition to paragraphs (a) and (c) of this section, for commuter category airplanes, the information must include the following:

(1) Procedures, speeds, and configuration(s) for making a normal takeoff.

(2) Procedures and speeds for carrying out an accelerate-stop in accordance with § 23.55.

(3) Procedures and speeds for continuing a takeoff following engine failure in accordance with § 23.59(a)(1) and for following the flight path determined under § 23.57 and § 23.61(a).

(g) For multiengine airplanes, information identifying each operating condition in which the fuel system independence prescribed in § 23.953 is necessary for safety must be furnished, together with instructions for placing the fuel system in a configuration used to show compliance with that section.

(h) For each airplane showing compliance with § 23.1353 (g)(2) or (g)(3), the operating procedures for disconnecting the battery from its charging source must be furnished.

(i) Information on the total quantity of usable fuel for each fuel tank, and the effect on the usable fuel quantity, as a result of a failure of any pump, must be furnished.

(j) Procedures for the safe operation of the airplane's systems and equipment, both in normal use and in the event of malfunction, must be furnished.

[Doc. No. 27807, 61 FR 5194, Feb. 9, 1996]

#### § 23.1587 Performance information.

Unless otherwise prescribed, performance information must be provided over the altitude and temperature ranges required by § 23.45(b).

(a) For all airplanes, the following information must be furnished—

(1) The stalling speeds  $V_{SO}$  and  $V_{S1}$  with the landing gear and wing flaps retracted, determined at maximum weight under § 23.49, and the effect on these stalling speeds of angles of bank up to 60 degrees;

(2) The steady rate and gradient of climb with all engines operating, determined under § 23.69(a);

(3) The landing distance, determined under § 23.75 for each airport altitude and standard temperature, and the type of surface for which it is valid;

(4) The effect on landing distances of operation on other than smooth hard surfaces, when dry, determined under § 23.45(g); and

(5) The effect on landing distances of runway slope and 50 percent of the headwind component and 150 percent of the tailwind component.

(b) In addition to paragraph (a) of this section, for all normal, utility, and acrobatic category reciprocating engine-powered airplanes of 6,000 pounds or less maximum weight, the steady

angle of climb/descent, determined under § 23.77(a), must be furnished.

(c) In addition to paragraphs (a) and (b) of this section, if appropriate, for normal, utility, and acrobatic category airplanes, the following information must be furnished—

(1) The takeoff distance, determined under § 23.53 and the type of surface for which it is valid.

(2) The effect on takeoff distance of operation on other than smooth hard surfaces, when dry, determined under § 23.45(g);

(3) The effect on takeoff distance of runway slope and 50 percent of the headwind component and 150 percent of the tailwind component;

(4) For multiengine reciprocating engine-powered airplanes of more than 6,000 pounds maximum weight and multiengine turbine powered airplanes, the one-engine-inoperative takeoff climb/descent gradient, determined under § 23.66;

(5) For multiengine airplanes, the enroute rate and gradient of climb/descent with one engine inoperative, determined under § 23.69(b); and

(6) For single-engine airplanes, the glide performance determined under § 23.71.

(d) In addition to paragraph (a) of this section, for commuter category airplanes, the following information must be furnished—

(1) The accelerate-stop distance determined under § 23.55;

(2) The takeoff distance determined under § 23.59(a);

(3) At the option of the applicant, the takeoff run determined under § 23.59(b);

(4) The effect on accelerate-stop distance, takeoff distance and, if determined, takeoff run, of operation on other than smooth hard surfaces, when dry, determined under § 23.45(g);

(5) The effect on accelerate-stop distance, takeoff distance, and if determined, takeoff run, of runway slope and 50 percent of the headwind component and 150 percent of the tailwind component;

(6) The net takeoff flight path determined under § 23.61(b);

(7) The enroute gradient of climb/descent with one engine inoperative, determined under § 23.69(b);