

## § 23.71

(5) A climb speed not less than  $1.2 V_{S1}$ .

[Doc. No. 27807, 61 FR 5187, Feb. 9, 1996]

### § 23.71 Glide: Single-engine airplanes.

The maximum horizontal distance traveled in still air, in nautical miles, per 1,000 feet of altitude lost in a glide, and the speed necessary to achieve this must be determined with the engine inoperative, its propeller in the minimum drag position, and landing gear and wing flaps in the most favorable available position.

[Doc. No. 27807, 61 FR 5187, Feb. 9, 1996]

### § 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,  $V_{REF}$ , must 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  $1.3 V_{SO}$ .

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

(c) For commuter category airplanes, the reference landing approach speed,  $V_{REF}$ , must not be less than the greater of  $1.05 V_{MC}$ , determined in § 23.149(c), and  $1.3 V_{SO}$ .

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EFFECTIVE DATE NOTE: By Amdt. 23-62, 76 FR 75754, Dec. 2, 2011, § 23.73 was revised, effective Jan. 31, 2012. For the convenience of the user, the revised text is set forth 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  $1.3 V_{S1}$ .

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(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  $1.3 V_{S1}$ .

### § 23.75 Landing distance.

The horizontal distance necessary to land and come to a complete stop from a point 50 feet above the landing surface must be determined, for standard temperatures at each weight and altitude within the operational limits established for landing, as follows:

(a) A steady approach at not less than  $V_{REF}$ , determined in accordance with § 23.73 (a), (b), or (c), as appropriate, must be maintained down to the 50 foot height and—

(1) The steady approach must be at a gradient of descent not greater than 5.2 percent (3 degrees) down to the 50-foot height.

(2) In addition, an applicant may demonstrate by tests that a maximum steady approach gradient steeper than 5.2 percent, down to the 50-foot height, is safe. The gradient must be established as an operating limitation and the information necessary to display the gradient must be available to the pilot by an appropriate instrument.

(b) A constant configuration must be maintained throughout the maneuver.

(c) The landing must be made without excessive vertical acceleration or tendency to bounce, nose over, ground loop, porpoise, or water loop.

(d) It must be shown that a safe transition to the balked landing conditions of § 23.77 can be made from the conditions that exist at the 50 foot height, at maximum landing weight, or at the maximum landing weight for altitude and temperature of § 23.63 (c)(2) or (d)(2), as appropriate.

(e) The brakes must be used so as to not cause excessive wear of brakes or tires.