§ 23.171  General.

The airplane must be longitudinally, directionally, and laterally stable under §§ 23.173 through 23.181. In addition, the airplane must show suitable stability and control “feel” (static stability) in any condition normally encountered in service, if flight tests show it is necessary for safe operation.

§ 23.173  Static longitudinal stability.

Under the conditions specified in §23.175 and with the airplane trimmed as indicated, the characteristics of the elevator control forces and the friction within the control system must be as follows:

(a) A pull must be required to obtain and maintain speeds below the specified trim speed and a push required to obtain and maintain speeds above the specified trim speed. This must be shown at any speed that can be obtained, except that speeds requiring a control force in excess of 40 pounds or speeds above the maximum allowable speed or below the minimum speed for steady unstalled flight, need not be considered.

(b) The airspeed must return to within the tolerances specified for applicable categories of airplanes when the control force is slowly released at any speed within the speed range specified in paragraph (a) of this section. The applicable tolerances are—

1. The critical engine inoperative and its propeller in the minimum drag position;
2. The remaining engine(s) at takeoff power;
3. Landing gear retracted;
4. Wing flaps in the takeoff position(s); and
5. An angle of bank not exceeding 5 degrees.