§ 23.701 Flap interconnection.

(a) The main wing flaps and related movable surfaces as a system must—
(1) Be synchronized by a mechanical interconnection between the movable flap surfaces that is independent of the flap drive system; or by an approved equivalent means; or
(2) Be designed so that the occurrence of any failure of the flap system that would result in an unsafe flight

§ 23.693 Joints.

Control system joints (in push-pull systems) that are subject to angular motion, except those in ball and roller bearing systems, must have a special factor of safety of not less than 3.33 with respect to the ultimate bearing strength of the softest material used as a bearing. This factor may be reduced to 2.0 for joints in cable control systems. For ball or roller bearings, the approved ratings may not be exceeded.

§ 23.697 Wing flap controls.

(a) Each wing flap control must be designed so that, when the flap has been placed in any position upon which compliance with the performance requirements of this part is based, the flap will not move from that position unless the control is adjusted or is moved by the automatic operation of a flap load limiting device.

(b) The rate of movement of the flaps in response to the operation of the pilot’s control or automatic device must give satisfactory flight and performance characteristics under steady or changing conditions of airspeed, engine power, and attitude.

(c) If compliance with §23.15(b)(3) necessitates wing flap retraction to positions that are not fully retracted, the wing flap control lever settings corresponding to those positions must be positively located such that a definite change of direction of movement of the lever is necessary to select settings beyond those settings.


§ 23.699 Wing flap position indicator.

There must be a wing flap position indicator for—

(a) Flap installations with only the retracted and fully extended position, unless—
(1) A direct operating mechanism provides a sense of “feel” and position (such as when a mechanical linkage is employed); or
(2) The flap position is readily determined without seriously detracting from other piloting duties under any flight condition, day or night; and

(b) Flap installation with intermediate flap positions if—
(1) Any flap position other than retracted or fully extended is used to show compliance with the performance requirements of this part; and

(2) The flap installation does not meet the requirements of paragraph (a)(1) of this section.

[Doc. No. 27806, 61 FR 5165, Feb. 9, 1996]
§ 23.703 Takeoff warning system.

For commuter category airplanes, unless it can be shown that a lift or longitudinal trim device that affects the takeoff performance of the aircraft would not give an unsafe takeoff configuration when selection out of an approved takeoff position, a takeoff warning system must be installed and meet the following requirements:

(a) The system must provide to the pilots an aural warning that is automatically activated during the initial portion of the takeoff role if the airplane is in a configuration that would not allow a safe takeoff. The warning must continue until—

(1) The configuration is changed to allow safe takeoff, or

(2) Action is taken by the pilot to abandon the takeoff roll.

(b) The means used to activate the system must function properly for all authorized takeoff power settings and procedures and throughout the ranges of takeoff weights, altitudes, and temperatures for which certification is requested.

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