

making of this amendment, and due consideration has been given to all relevant matter presented.

In consideration of the foregoing, Part 4b of the Civil Air Regulations (14 CFR Part 4b, as amended) is hereby amended as follows, effective May 3, 1962:

1. By amending § 4b.1 by amending paragraphs (b) (2), (d) (9), (d) (10), (d) (15), and (d) (16) to read as follows:

§ 4b.1 Definitions.

(b) *General design.* * * *

(2) *Maximum ambient atmospheric temperature.* The maximum ambient atmospheric temperature is the temperature selected by the applicant as the maximum operational limit.

(d) *Speeds.* * * *

(9) V_{DF}/M_{DF} : The demonstrated flight diving speed at which compliance is shown with the applicable flight requirements. (See §§ 4b.190 and 4b.191(a).)

(10) V_F : The design flap speeds for flight loading conditions. (See § 4b.210 (b) (1).)

(15) V_{FC}/M_{FC} : The maximum speed for stability characteristics. (See § 4b.191 (b).)

(16) V_{MO}/M_{MO} : The maximum operating limit speed. (See § 4b.711.)

§ 4b.11 [Amendment]

2. By amending § 4b.11(b) by inserting in the first sentence between the words "required" and "except" the phrase "notwithstanding the applicant may have been issued a provisional type certificate".

3. By amending § 4b.130 by adding new paragraphs (c), (d), and (e) to read as follows:

§ 4b.130 Controllability; general.

(c) Compliance with the "strength of pilots" limits in paragraph (b) of this section need not be demonstrated unless the condition is found to be marginal. In the latter case, they shall not exceed the following pilot control force limits, expressed in pounds:

	Pitch	Roll	Yaw
(1) For temporary application.....	75	60	180
(2) For prolonged application.....	10	5	20

Pitch and roll forces shall be measured as applied to the control wheel.

(d) For the purpose of complying with the temporary control force limitations of paragraph (c) of this section, the airplane shall be operated in accordance with approved operating procedure or conventional operating practice including being as nearly trimmed as possible at the prior steady flight condition, except that in the case of takeoff the airplane shall be trimmed in accordance with approved operating procedures.

(e) For the purpose of complying with the prolonged control force limitations of paragraph (c) of this section the airplane shall be as nearly trimmed as possible.

§ 4b.131 [Amendment]

4. By amending § 4b.131(b) by deleting the first sentence and inserting in lieu thereof the following: "During each of the following controllability demonstrations, a change in the trim control shall not be required. In addition, exertion of more than 50 pounds control force, representative of the maximum temporary force which can readily be applied by one hand, shall not be required."

§ 4b.132 [Amendment]

5. By amending § 4b.132(e) by deleting from the last sentence the symbol " V_{NE} " and inserting in lieu thereof " V_{FC}/M_{FC} ".

§ 4b.141 [Amendment]

6. By amending § 4b.141 by deleting the words " V_{NO} or to M_{NO} , whichever is the lesser" and inserting in lieu thereof " V_{MO}/M_{MO} ".

§ 4b.142 [Amendment]

7. By amending § 4b.142(c) by deleting the word " V_{NO} or to M_{NO} , whichever is the lesser" and inserting in lieu thereof " V_{MO}/M_{MO} ".

8. By amending § 4b.150 to read as follows:

§ 4b.150 General.

The airplane shall be longitudinally, directionally, and laterally stable in accordance with §§ 4b.151 through 4b.158. Suitable stability shall be required in other conditions normally encountered in service if flight tests show such stability to be necessary for safe operation.

§ 4b.150-1 [Deletion]

9. By deleting § 4b.150-1.

10. By amending § 4b.151 by amending the introductory paragraph and paragraphs (a) and (c) to read as follows:

§ 4b.151 Static longitudinal stability.

In the conditions outlined in §§ 4b.152 through 4b.155, the characteristics of the elevator control forces including friction and the elevator control surface displacement shall comply with paragraphs (a) through (c) of this section.

(a) A pull shall be required to obtain and maintain speeds below the specified trim speed, and a push shall be required to obtain and maintain speeds above the specified trim speed, except that if the elevator control forces are not dependent upon the hinge moments of the elevator control surface it shall also be shown that an upward displacement of the elevator trailing edge is required to obtain and maintain speeds below the specified trim speed and a downward displacement of the elevator trailing edge is required to obtain and maintain speeds above the specified trim speed. These criteria shall apply to any speed which can be obtained, except that such speeds need not be greater than the landing gear or the wing flap operating limit speed or V_{FC}/M_{FC} , whichever is appropriate, or need not be less than the minimum speed in steady unstalled flight.

(c) The stable slope of the stick force versus speed curve shall not be less than

0.5 pounds per 3 knots nor shall it exceed a value beyond which control of the airplane is difficult.

§ 4b.151-1 [Deletion]

11. By deleting § 4b.151-1.

12. By amending § 4b.152 to read as follows:

§ 4b.152 Stability during landing.

The stick force curve and, if required by § 4b.151(a), the elevator angle curve shall have stable slopes and the stick force shall not exceed 80 pounds at any speed between $1.1 V_{S_0}$ and $1.8 V_{S_0}$ with:

- (a) Wing flaps in the landing position;
- (b) The landing gear extended;
- (c) Maximum landing weight;
- (d) Power, or thrust, off on all engines; and
- (e) The airplane trimmed at $1.4 V_{S_0}$ with power or thrust off.

§ 4b.152-1 [Deletion]

13. By deleting § 4b.152-1.

14. By amending § 4b.153 to read as follows:

§ 4b.153 Stability during approach.

The stick force curve and, if required by § 4b.151(a), the elevator angle curve shall have stable slopes at all speeds between $1.1 V_{S_1}$ and $1.8 V_{S_1}$ with:

- (a) Wing flaps in the approach position;
- (b) Landing gear retracted;
- (c) Maximum landing weight; and
- (d) The airplane trimmed at $1.4 V_{S_1}$ and with power sufficient to maintain level flight at this speed.

§ 4b.153-1 [Deletion]

15. By deleting § 4b.153-1.

16. By amending § 4b.154 to read as follows:

§ 4b.154 Stability during climb.

The stick force curve and, if required by § 4b.151(a), the elevator angle curve shall have stable slopes at all speeds between 85 and 115 percent of the speed at which the airplane is trimmed with:

- (a) Wing flaps retracted;
- (b) Landing gear retracted;
- (c) Maximum takeoff weight;
- (d) 75 percent of maximum continuous power for reciprocating engines; maximum power or thrust selected by the applicant as an operating limitation for use during climb (see § 4b.718) for turbine engines; and
- (e) The airplane trimmed at the best rate-of-climb speed except that the speed need not be less than $1.4 V_{S_1}$.

§ 4b.154-1 [Deletion]

17. By deleting § 4b.154-1.

18. By amending § 4b.155 to read as follows:

§ 4b.155 Stability during cruising.

(a) *Landing gear retracted; high speed.* The stick force curve and, if required by § 4b.151(a), the elevator angle curve shall have stable slopes at all speeds from V_{FC}/M_{FC} to the speed equal to

$$V_{FC} - \left(\frac{V_{FC} - 1.4 V_{S_1}}{2} \right)$$

or to 50 knots less than the trim speed specified in subparagraph (4) of this paragraph, whichever