§ 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, evidence of the maximum steady state control force, representative of the maximum temporary control force which can readily be applied by one hand, shall not be required.”

§ 4b.132 [Amendment]
5. By amending § 4b.132(e) by deleting the last sentence the symbol “V_{N/V}” and inserting in lieu thereof “V_{FRC/MRC}.”

§ 4b.141 [Amendment]
6. By amending § 4b.141 by deleting the words “V_{N} or to M_{ao}, whichever is the lesser” and inserting in lieu thereof “V_{M_{ao}}.”

§ 4b.142 [Amendment]
7. By amending § 4b.142(c) by deleting the word “or” to M_{ao}, whichever is the lesser” and inserting in lieu thereof “V_{M_{ao}}.”
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.168. Stability shall be required in the conditions normally encountered in service if flight tests show such stability to be necessary for safe operation. § 4b.150-1 [Deletion]
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.168, the characteristics of the airplane control forces including friction and the elevator control surface displacement shall comply with paragraphs (a) through (e) 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_{FRC/MRC}, whichever is appropriate, or need not be less than the minimum speed in steady uninstalled flight.

§ 4b.154 Stability during climbing.
The airplane trimmed at the best rate-of-climb speed except that the speed need not be less than 1.4 V_{N}.

§ 4b.154-1 [Deletion]
13. By amending § 4b.155 to read as follows:

§ 4b.155 Stability during cruise.
(a) Landing gear retracted; high speed. The stick force curve and, if required by § 4b.151(a), the elevator angle curve shall have steady slopes at all speeds from V_{FRC/MRC} to the speed equal to \( \frac{V_{FRC}-1.4 V_{N}}{2} \) or to 50 knots less than the trim speed specified in subparagraph (4) of this paragraph, whichever
Is the lesser speed except that it need not be less than 1.4 $V_s$, and the stick force shall not exceed 50 pounds with:

1. Wing flaps retracted;
2. The most critical weight between maximum landing weight and maximum takeoff weight;
3. 75 percent of maximum continuous power of the reciprocating engine (or maximum cruising power selected by the applicant as an operating limitation (see § 4b.714b) for turbine engines, except that the power need not exceed that required at $V_{MO/MA}$);
4. The airplane trimmed for level flight with the power required in subparagraph (3) of this paragraph;
5. Landing gear retracted; low speed.

The stick force curve and, if required by § 4b.151(a), the elevator angle curve shall have stable slopes at all speeds from a speed equal to

$$V_E = \frac{V_{RC} - 1.4 \ V_s}{2}$$

to 1.4 $V_s$, and the stick force shall not exceed 50 pounds with the wing flaps and weight as specified in paragraph (a) of this section and with:

1. Power required for level flight at a speed equal to $V_{RC} - 1.4 \ V_s$;
2. The airplane trimmed for level flight with the power required in subparagraph (1) of this paragraph.

Note: At altitude where Mach number is above 0.80, the time corresponding with $M_{CR}$ may be used to calculate the speed $V_{RC} = \frac{V_E - 1.4 \ V_s}{2}$.

(o) Lifting gear extended. The stick force curve and, if required by § 4b.151(a), the elevator angle curve shall have stable slopes at all speeds between 1.4 $V_s$ and $V_{ES}$ and the stick force shall not exceed 50 pounds with the wing flaps and the weight as specified in paragraph (a) of this section and with:

1. Power required for level flight at $V_{ES}$; and
2. The airplane trimmed for level flight with the power required in subparagraph (1) of this paragraph.

§ 4b.155—(Deletion)

§ 4b.156

20. By amending § 4b.156 by inserting between the words “airplane” and “shall” the parenthetical expression “(e.g., $V_{RC}$, $V_{ES}$, or $V_{RC/MA}$).”

§ 4b.157

21. By amending § 4b.157 by deleting from paragraphs (a) and (b) the words “the operating limit speed” and inserting in lieu thereof the words “$V_{RC}$, $V_{ES}$, or $V_{RC/MA}$, whichever is appropriate to the airplane configuration.”

§ 4b.157—(Amendment)

22. By amending § 4b.157—(Amendment) by deleting paragraphs (e) (3), (e) (4), and (f) (2).

§ 4b.158

23. By amending § 4b.158 by inserting between the words “airplane” and “shall” the parenthetical expression “(e.g., $V_{RC}$, $V_{ES}$, or $V_{RC/MA}$).”

§ 4b.160(b) by adding to the end thereof the parenthetical reference “(see § 4b.714(b)”).

§ 4b.160

25. By amending § 4b.160(b) to read as follows:

§ 4b.160 Stalling; symmetrical power.

(a) Speed increase and recovery characteristics.

(1) Operating conditions or characteristics likely to cause inadvertent speed increases, including upsets in pitch and roll, shall be simulated with the airplane trimmed at any cruise speed up to $V_{MO/MA}$ without requiring exceptional strength or skill on the part of the pilot, without exceeding $V_{MO/MA}$ or $V_{MO/Max}$, or the structural limitations, and without producing buffeting which would cause structural damage.

Note: Examples of operating conditions or characteristics likely to cause speed increases are: gust upsets, inadvertent control movement, low stick force gradient in relation to control sensitivity, passenger movement, landing gear extension, and desert gusts above $V_{MO/Max}$.

(2) At all speeds up to $V_{MO/Max}$, there shall be no control reversal. Any reversal of elevator control force or tendency of the airplane to pitch, roll, or yaw, shall be mild and readily controllable using normal piloting techniques.

(b) Maximum speed for stability characteristics. $V_{RC/MA}$ and $V_{RC/Max}$ shall be the maximum speed at which the requirements of §§ 4b.132(b), 4b.156(a), 4b.156, 4b.157(a), and 4b.158 are required to be met with flaps and landing gear retracted. It shall not be less than a speed halfway between $V_{MO/MA}$ and $V_{MO/Max}$, except that in the altitude range where Mach number is the limiting factor, $M_{CR}$ need not exceed the Mach number at which effective speed warning occurs.

27. By amending § 4b.210(b) to read as follows:

§ 4b.210 General.

1. Design air speeds.

1. Design flap speeds. $V_f$. The design flap speed for each flap position established in accordance with § 4b.323(a) shall be sufficiently greater than the operating speed recommended for the corresponding stage of flight (including takeoff and landing) to allow for probable variations in control of airspeed and for transition from one flap position to another. $V_f$ shall not be less than:

(i) For $V_{MO/Max}$ and $V_{MO/Max}$ with flaps in approach position at maximum takeoff weight;

(ii) For $V_{MO/Max}$ with flaps in approach position at maximum landing weight;

(iii) For $V_{MO}$ with flaps in landing position at maximum landing weight.

Where an automatic flap positioning or load limiting device is employed, it shall be permissible to use the speeds and corresponding flap positions programmed or permitted by the device. (See § 4b.323(c).)

28. By amending § 4b.210(b) by adding to the end thereof the parenthetical reference “(see § 4b.711(c))”.

28. By amending § 4b.210(b) to read as follows:

(a) Design air speeds.

(b) Design flap speed, $V_f$. The design flap speed chosen by the applicant shall be used in determining the maximum operating limit speed for the airplane in accordance with § 4b.711.

29. By amending § 4b.212(a) by deleting the introductory paragraph and inserting in lieu thereof the following:

“When flaps are intended for use during takeoff, approach, or landing, the airplane shall be assumed to be subjected to symmetrical maneuvers and gusts within the range determined by the following conditions; at the design flap speeds established for those stages of flight in accordance with § 4b.210(c) and with the flaps in the corresponding position.”

31. By amending § 4b.212(b) by deleting from the introductory paragraph the words “$V_{RC}$ speed established in accordance with § 4b.711(c)” and inserting in lieu thereof “the flap design speed chosen for this condition.”

32. By amending § 4b.212 by deleting paragraphs (d) and amending paragraph (c) to read as follows:

§ 4b.212 Effect of high lift devices.

1. The airplane shall be designed for the conditions prescribed in paragraph (a) of this section, except that the airplane load factor need not exceed 1.0, taking into account the following effects as separate conditions:

1. Propeller slipstream corresponding with maximum continuous power at the design flap speeds $V_f$, and with takeoff power at not less than 1.4 times the stalling speed for the particular flap position and associated maximum weight; and

2. A head-on gust of 25 feet per second velocity (EAS).

33. By amending § 4b.216 by amending paragraphs (c) (4) and (5) to read as follows:

§ 4b.216 Supplementary flight conditions.

1. * * * * * *

(c) Pressurized cabin loads. * * * * *