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[4910-13]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 60**

publishes 10-25-02

**[Docket No. FAA-2002-12461; Notice No. 02-11]**

**RIN 2120-AH07**

**Flight Simulation Device Initial and Continuing Qualification and Use; Correction**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM); correction.

**SUMMARY:** This document makes a correction to the proposed rule published in the Federal Register on September 25, 2002 (67 FR 60284), which proposes to establish flight simulation device qualification requirements in a new part. The FAA inadvertently omitted a table in the original NPRM.

**DATES:** Send your comments on or before December 24, 2002.

**ADDRESSES:** Address your comments to the Docket Management System, U.S. Department of Transportation, Room Plaza 401, 400 Seventh Street, SW., Washington, DC 20590-0001. You must identify the docket number FAA-2002-12461 at the beginning of your comments, and you should submit two copies of your comments. If you wish to receive confirmation that FAA received your comments, include a self-addressed, stamped postcard.

You may also submit comments through the Internet to http://dms.dot.gov. You may review the public docket containing comments to these proposed regulations in person in the Dockets Office between 9:00 a.m. and 5:00 p.m., Monday through Friday,

except Federal holidays. The Dockets Office is on the plaza level of the NASSIF Building at the Department of Transportation at the above address. Also, you may review public dockets on the Internet at http://dms.dot.gov.

**FOR FURTHER INFORMATION CONTACT:** Edward Cook, National Simulator Program Staff (AFS-205), Flight Standards Service, Federal Aviation Administration, 1701 Columbia Avenue, College Park, GA 30337; telephone (404) 305-6100.

**SUPPLEMENTARY INFORMATION:** On September 25, 2002, the FAA published Notice No. 02-11, Flight Simulation Device Initial and Continuing Qualification and Use (67 FR 60284). The NPRM proposed to amend the regulations to establish flight simulation device qualification requirements for all certificate holders in a new part. The FAA inadvertently omitted a table entitled "Table of Alternative Source Data FTD Levels 2, 3, and 5. Single Engine (Turbo-Propeller) Airplane." The table provides a range of performance that is typical for single engine, turbo-propeller powered airplanes for the indicated objective tests located in Attachment 2 of Appendix B to Part 60.

**Correction**

In proposed rule FR Doc. 02-14785, published on September 25, 2002 (67 FR 60284), make the following corrections:

**PART 60—[CORRECTED]**

Appendix B to Part 60—[Corrected]

1. On page 60403, in Attachment 2 to Appendix B to Part 60, immediately following FIGURE 6. SMALL, MULTI-ENGINE (RECIPROCATING) AIRPLANE, RUDDER PEDAL POSITION VS. FORCE, add the following table:

Initial Caps

Attachment 2 to Appendix B to Part 60—~~Qualification Performance Standards for~~ Flight Training Device (FTD) Objective Tests

~~Airplane~~ Flight Training ~~Devices~~

* * * * *

| Table of Alternative Source Data FTD Levels 2,3, and 5. Single Engine (Turbo-Propeller) Airplane | |
|---|---|
| QPS Requirement | |
| **Applicable Test and Test Number** | **Authorized Performance Range** |
| **2. Performance** | |
| **a.** Takeoff. | |
| **(1)** Ground acceleration time; brake release to liftoff speed. | 20 - 30 Seconds. |
| **b.** Climb. | |
| **(1)** Normal climb with nominal gross weight, at best rate-of-climb airspeed. | Climb airspeed = 95 -115 knots.<br>Climb rate = 800 - 1800 fpm (4 – 9 m/sec). |
| **c.** Ground Deceleration. | |
| **(1)** Deceleration time from 80 knots to zero; with a nominal gross weight; using wheel brakes on a dry runway. | 20 - 35 Seconds. |
| **d.** Engines. | |
| **(1)** Acceleration; idle to takeoff power. | 4 - 8 Seconds. |
| **(2)** Deceleration; takeoff power to idle. | 3 - 7 Seconds. |
| **3. Handling Qualities.** | |

| Table of Alternative Source Data FTD Levels 2,3, and 5. Single Engine (Turbo-Propeller) Airplane | |
|---|---|
| QPS Requirement | |
| **Applicable Test and Test Number** | **Authorized Performance Range** |
| **a.** Static Control Checks. | |
| **(1)(b)** Column position vs. force. | Plot of Column Position vs. Force must fall within the shaded areas shown in Figure 7 of this appendix (Single Engine [Turbo-Propeller] Airplanes). |
| **(2)(b)** Wheel position vs. force. | Plot of Wheel Position vs. Force must fall within the shaded areas shown in Figure 8 of this appendix (Single Engine [Turbo-Propeller] Airplanes) |
| **(3)(b)** Pedal position vs. force. | Plot of Rudder Pedal Position vs. Force must fall within the shaded areas shown in Figure 9 of this appendix (Single Engine [Turbo-Propeller] Airplanes) |
| **(4)** Nosewheel steering force. | Plot of Rudder Pedal Position vs. Force must fall within the shaded areas shown in Figure 9 of this appendix (Single Engine [Turbo-Propeller] Airplanes) |
| **(5)** Rudder pedal steering calibration with full rudder pedal travel. | 10 - 30 degrees of nosewheel angle, both sides of neutral. |

| Table of Alternative Source Data FTD Levels 2,3, and 5. Single Engine (Turbo-Propeller) Airplane | |
|---|---|
| QPS Requirement | |
| **Applicable Test and Test Number** | **Authorized Performance Range** |
| **(8)** Brake pedal position vs. force; at maximum pedal deflection. | 50 - 100 lbs (22 - 44 daN) of force; |
| **b.** Longitudinal. | |
| **(1)** Power change force.<br>(a) Trim for straight and level flight at 80% of normal cruise airspeed with necessary power. Reduce power to flight idle. Do not change trim or configuration. After stabilized, record column force necessary to maintain original airspeed; or | 8 lbs (3.5 daN) of Push force to 8 lbs (3.5 daN) of Pull force. |
| (b) Trim for straight and level flight at 80% of normal cruise airspeed with necessary power. Add power to maximum setting. Do not change trim or configuration. After stabilized, record column force necessary to maintain original airspeed. | 12-22 lbs (5.3 – 9.7 daN) of force (Push). |

| Table of Alternative Source Data FTD Levels 2,3, and 5. Single Engine (Turbo-Propeller) Airplane | |
|---|---|
| QPS Requirement | |
| **Applicable Test and Test Number** | **Authorized Performance Range** |
| **(2)** Flap/slat change force.<br><br>(a) Trim for straight and level flight with flaps fully retracted at a constant airspeed within the flaps-extended airspeed range. Do not adjust trim or power. Extend the flaps to 50% of full flap travel. After stabilized, record stick force necessary to maintain original airspeed; or | 5 - 15 lbs (2.2 - 6.6 daN) of force (Pull). |
| (b) Trim for straight and level flight with flaps extended to 50% of full flap travel, at a constant airspeed within the flaps-extended airspeed range. Do not adjust trim or power. Retract the flaps to zero (fully retracted). After stabilized, record stick force necessary to maintain original airspeed. | 5 - 15 lbs (2.2 - 6.6 daN) of force (Push). |
| **(3)** Gear change force. | |

delete this line

| Table of Alternative Source Data FTD Levels 2,3, and 5. Single Engine (Turbo-Propeller) Airplane | |
|---|---|
| QPS Requirement | |
| **Applicable Test and Test Number** | **Authorized Performance Range** |
| (a) Trim for straight and level flight with landing gear retracted at a constant airspeed within the landing gear-extended airspeed range. Do not adjust trim or power. Extend the landing gear. After stabilized, record stick force necessary to maintain original airspeed; or | 2 - 12 lbs (0.88 - 5.3 daN) of force (Pull). |
| (b) Trim for straight and level flight with landing gear extended, at a constant airspeed within the landing gear-extended airspeed range. Do not adjust trim or power. Retract the landing gear. After stabilized, record stick force necessary to maintain original airspeed. | 2 - 12 lbs (0.88 - 5.3 daN) of force (Push). |
| **(4)** Gear and flap operating times.<br>(a) Extend gear. | 2 - 12 seconds. |

| Table of Alternative Source Data FTD Levels 2,3, and 5. Single Engine (Turbo-Propeller) Airplane | |
|---|---|
| QPS Requirement | |
| **Applicable Test and Test Number** | **Authorized Performance Range** |
| (b) Retract gear. | 2 - 12 seconds. |
| (c) Extend flaps, zero to 50% travel. | (c) 3 - 13 seconds. |
| (d) Retract flaps, 50% travel to zero. | (d) 3 - 13 seconds. |
| **(5)** Longitudinal trim. | Must be able to trim longitudinal stick force to "zero" in each of the following configurations:<br>(a) cruise;<br>(b) approach; and<br>(c) landing. |
| **(7)** Longitudinal static stability. | Must exhibit positive static stability. |
| **(8)** Stall warning (actuation of stall warning device) with nominal gross weight; wings level; clean configuration, and a deceleration rate of approximately one (1) knot per second. | |

| Table of Alternative Source Data FTD Levels 2,3, and 5. Single Engine (Turbo-Propeller) Airplane | |
|---|---|
| QPS Requirement | |
| **Applicable Test and Test Number** | **Authorized Performance Range** |
| (a) Landing configuration. | 60 - 90 knots; ± 5 degrees of bank. |
| (b) Clean configuration. | Landing configuration speed, + 10 - 20 percent. |
| **(9)(b)** Phugoid dynamics. | Must have a phugoid with a period of 30 - 60 seconds; and may not reach ½ or double amplitude in less than 2 cycles. |
| **c.** Lateral Directional. | |
| **(1)** Roll response.<br>Roll rate must be measured through at least 30 degrees of roll. Aileron control must be deflected 50 percent of maximum travel. | Must have a roll rate of 6 - 40 degrees/second. |
| **(2)** Response to roll controller step input.<br>Trim for straight and level flight at nominal gross weight and approach airspeed. Roll into a 30 degree bank turn and stabilize. When ready, input a 50 percent aileron control opposite to the direction of turn. When | Roll rate must decrease to not more than 10 percent of the roll rate achieved, within 1 - 3 seconds of control release. |

| Table of Alternative Source Data FTD Levels 2,3, and 5. Single Engine (Turbo-Propeller) Airplane | |
|---|---|
| QPS Requirement | |
| **Applicable Test and Test Number** | **Authorized Performance Range** |
| reaching zero bank angle, rapidly neutralize the aileron control and release. Record the response from at least 2 seconds prior to the initiation of control input opposite to the direction of turn until at least 20 seconds after neutralization of the controls. | |
| **(3)(a) and (b)** Spiral stability.<br>Cruise configuration and normal cruise airspeed. Establish a 20 - 30 degree bank. When stabilized, neutralize the aileron control and release. Must be completed in both directions of turn. | Initial bank angle (± 5 degrees) after 20 seconds. |
| **(4)(b)** Rudder response.<br>Use 50 percent of maximum rudder deflection. Applicable to approach or landing configuration | 6 - 12 degrees/second yaw rate. |
| **(5)(b)** Dutch roll, yaw damper off.<br>Applicable to cruise and approach configurations. | A period of 2 - 5 seconds; and ½ - 3 cycles. |

| Table of Alternative Source Data FTD Levels 2,3, and 5. Single Engine (Turbo-Propeller) Airplane | |
|---|---|
| QPS Requirement | |
| **Applicable Test and Test Number** | **Authorized Performance Range** |
| **(6)** Steady state sideslip.<br><br>Use 50 percent rudder deflection; Applicable to approach and landing configurations. | 2 - 10 degrees of bank; 4 - 10 degrees of sideslip; and 2 -10 degrees of aileron. |
| **4.** Cockpit Instrument Response. | |
| Instrument systems response to an abrupt pilot controller input. One test is required in each axis (pitch, roll, and yaw). | 300 milliseconds or less. |

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Issued in Washington, DC on October 18, 2002.

Donald P. Byrne,
Assistant Chief Counsel for Regulations.