§ 25.481 Tail-down landing conditions.

(a) In the tail-down attitude, the airplane is assumed to contact the ground at forward velocity components, ranging from $V_{L1}$ to $V_{L2}$ parallel to the ground under the conditions prescribed in §25.473 with—

(1) $V_{L1}$ equal to $V_{SO}$ (TAS) at the appropriate landing weight and in standard sea level conditions; and

(2) $V_{L2}$ equal to $V_{SO}$ (TAS) at the appropriate landing weight and altitudes in a hot day temperature of 41 degrees F., above standard.

(3) The combination of vertical and drag components considered to be acting at the main wheel axle centerline.

(b) For the tail-down landing condition for airplanes with tail wheels, the main wheels are assumed to contact the ground simultaneously, in accordance with figure 3 of appendix A. Ground reaction conditions on the tail wheel are assumed to act—

(1) Vertically; and

(2) Up and aft through the axle at 45 degrees to the ground line.

(c) For the tail-down landing condition for airplanes with nose wheels, the airplane is assumed to be at an attitude corresponding to either the stalling angle or the maximum angle allowing clearance with the ground by each part of the airplane other than the main wheels, in accordance with figure 3 of appendix A, whichever is less.


§ 25.483 One-gear landing conditions.

For the one-gear landing conditions, the airplane is assumed to be in the level attitude and to contact the ground on one main landing gear, in accordance with Figure 4 of Appendix A of this part. In this attitude—

(a) The ground reactions must be the same as those obtained on that side under §25.479(d)(1), and

(b) Each unbalanced external load must be reacted by airplane inertia in a rational or conservative manner.


§ 25.485 Side load conditions.

In addition to §25.479(d)(2) the following conditions must be considered:

(a) For the side load condition, the airplane is assumed to be in the level attitude with only the main wheels contacting the ground, in accordance with Figure 5 of appendix A.

(b) Side loads of 0.8 of the vertical reaction (on one side) acting inward and 0.6 of the vertical reaction (on the other side) acting outward must be combined with one-half of the maximum vertical ground reactions obtained in the level landing conditions. These loads are assumed to be applied at the ground contact point and to be resisted by the inertia of the airplane.