§ 23.57 Takeoff path.

For normal, utility, and acrobatic category multiengine jets of more than 6,000 pounds maximum weight and commuter category airplanes, the takeoff path is as follows:

by the applicant and must not be less than the greatest of the following:

(i) \( V_1 \);

(ii) 1.05 \( V_{MC} \) determined under § 23.149(b);

(iii) 1.10 \( V_{SI} \); or

(iv) The speed that allows attaining the initial climb-out speed, \( V_2 \), before reaching a height of 35 feet above the takeoff surface in accordance with § 23.57(c)(2).

(3) For any given set of conditions, such as weight, altitude, temperature, and configuration, a single value of \( V_R \) must be used to show compliance with both the one-engine-inoperative takeoff and all-engines-operating takeoff requirements.

(4) The takeoff safety speed, \( V_2 \), in terms of calibrated airspeed, must be selected by the applicant so as to allow the gradient of climb required in § 23.67(c)(1) and (c)(2) but not be less than 1.10 \( V_{MC} \) or less than 1.20 \( V_{SI} \).

(5) The one-engine-inoperative takeoff distance, using a normal rotation rate at a speed 5 knots less than \( V_R \), established in accordance with paragraph (c)(2) of this section, must be shown not to exceed the corresponding one-engine-inoperative takeoff distance, determined in accordance with § 23.57 and § 23.59(a)(1), using the established \( V_R \). The takeoff, otherwise performed in accordance with § 23.57, must be continued safely from the point at which the airplane is 35 feet above the takeoff surface and at a speed not less than the established \( V_2 \) minus 5 knots.

(6) The applicant must show, with all engines operating, that marked increases in the scheduled takeoff distances, determined in accordance with § 23.59(a)(2), do not result from over-rotation of the airplane or out-of-trim conditions.