§ 27.51 Takeoff.

The takeoff, with takeoff power and r.p.m. at the most critical center of gravity, and with weight from the maximum weight at sea level to the weight for which takeoff certification is requested for each altitude covered by this section—

(a) May not require exceptional piloting skill or exceptionally favorable conditions throughout the ranges of altitude from standard sea level conditions to the maximum altitude for which takeoff and landing certification is requested, and

(b) Must be made in such a manner that a landing can be made safely at any point along the flight path if an engine fails. This must be demonstrated up to the maximum altitude for which takeoff and landing certification is requested or 7,000 feet density altitude, whichever is less.

[Amdt. No. 27–44, 73 FR 10999, Feb. 29, 2008]

§ 27.65 Climb: all engines operating.

(a) For rotorcraft other than helicopters—

(1) The steady rate of climb, at $V_{Y}$, must be determined—

(i) With maximum continuous power on each engine;

(ii) With the landing gear retracted; and

(iii) For the weights, altitudes, and temperatures for which certification is requested; and

(2) The climb gradient, at the rate of climb determined in accordance with paragraph (a)(1) of this section, must be either—

(i) At least 1.10 if the horizontal distance required to take off and climb over a 50-foot obstacle is determined for each weight, altitude, and temperature within the range for which certification is requested; or

(ii) At least 1.6 under standard sea level conditions.

(b) Each helicopter must meet the following requirements:

(1) $V_{Y}$ must be determined—

(i) For standard sea level conditions;  

(ii) At maximum weight; and

(iii) With maximum continuous power on each engine.

(2) The steady rate of climb must be determined—

§ 27.71 Autorotation performance.

For single-engine helicopters and multiengine helicopters that do not meet the Category A engine isolation requirements of Part 29 of this chapter, the minimum rate of descent airspeed and the best angle-of-glide airspeed must be determined in autorotation at—

(a) Maximum weight; and