§ 29.687 Spring devices.

(a) Each control system spring device whose failure could cause flutter or other unsafe characteristics must be reliable.

(b) Compliance with paragraph (a) of this section must be shown by tests simulating service conditions.

§ 29.691 Autorotation control mechanism.

Each main rotor blade pitch control mechanism must allow rapid entry into autorotation after power failure.

§ 29.685 Power boost and power-operated control system.

(a) If a power boost or power-operated control system is used, an alternate system must be immediately available that allows continued safe flight and landing in the event of—

(1) Any single failure in the power portion of the system; or

(2) The failure of all engines.

(b) Each alternate system may be a duplicate power portion or a manually operated mechanical system. The power portion includes the power source (such as hydraulic pumps), and such items as valves, lines, and actuators.

(c) The failure of mechanical parts (such as piston rods and links), and the jamming of power cylinders, must be considered unless they are extremely improbable.

§ 29.695 Power boost and power-operated control system.

(a) If a power boost or power-operated control system is used, an alternate system must be immediately available that allows continued safe flight and landing in the event of—

(1) Any single failure in the power portion of the system; or

(2) The failure of all engines.

(b) Each alternate system may be a duplicate power portion or a manually operated mechanical system. The power portion includes the power source (such as hydraulic pumps), and such items as valves, lines, and actuators.

(c) The failure of mechanical parts (such as piston rods and links), and the jamming of power cylinders, must be considered unless they are extremely improbable.

§ 29.723 Shock absorption tests.

The landing inertia load factor and the reserve energy absorption capacity of the landing gear must be substantiated by the tests prescribed in §§29.725 and 29.727, respectively. These tests must be conducted on the complete rotorcraft or on units consisting of wheel, tire, and shock absorber in their proper relation.

§ 29.725 Limit drop test.

The limit drop test must be conducted as follows:

(a) The drop height must be at least 8 inches.

(b) If considered, the rotor lift specified in §29.473(a) must be introduced into the drop test by appropriate energy absorbing devices or by the use of an effective mass.

(c) Each landing gear unit must be tested in the attitude simulating the landing condition that is most critical from the standpoint of the energy to be absorbed by it.

(d) When an effective mass is used in showing compliance with paragraph (b) of this section, the following formulae may be used instead of more rational computations.