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Part 25 AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY AIRPLANES
Subpart D--Design and Construction Emergency Provisions

Sec. 25.812

[Emergency lighting.]

[(a) An emergency lighting system, independent of the main lighting system, must be installed which includes:

(1) Illuminated emergency exit marking and locating signs, sources of general cabin illumination, and interior lighting in emergency exit areas.

(2) Exterior emergency lighting.

(b) Each passenger exit sign and each exit locating sign must have white letters at least 1 inch high on a red background at least 2 inches high. These signs may be internally electrically illuminated, or self-illuminated by other than electrical means, with an initial brightness of at least 160 microlamberts. The colors may be reversed in the case of internally electrically illuminated signs if this will increase the illumination of the exit.

(c) General illumination in the passenger cabin must be provided so that when measured along the centerline of main passenger aisles at seat armrest height and at 40-inch intervals, the average illumination is not less than 0.05 foot-candle. A main passenger aisle is considered to extend along the fuselage from the most forward passenger emergency exit or cabin occupant seat, whichever is farther forward, to the most rearward passenger emergency exit or cabin occupant seat, whichever is farther aft.

(d) The floor of the passageway leading to each floor-level passenger emergency exit, between the main aisles and the exit openings, must be provided with illumination.

(e) The emergency lighting system must be designed as follows:

(1) The lights must be operable manually from the flight crew station and (if required by the operating rules of this chapter) from a point in the passenger compartment that is readily accessible to a normal flight attendant seat. Means must be provided to safeguard against inadvertent operation of the manual controls.

(2) When armed or turned on, the lights must remain lighted or become lighted upon interruption (except an interruption caused by a vertical separation of the fuselage during crash landing) of the airplane's normal electric power.

(f) Exterior emergency lighting must be provided at each overwing exit so that the illumination is--

(1) Not less than 0.02 foot-candle (measured on a plane parallel to the surface) on a 2-square-foot area where an evacuee is likely to make his first step outside the cabin;

(2) Not less than 0.05 foot-candle (measured normal to the direction of the incident light) for a minimum width of 2 feet along the 30 percent of the slip-resistant escape route required in Sec. 25.803(e) that is farthest from the exit; and

(3) Not less than 0.02 foot-candle on the ground surface with the landing gear extended (measured on a horizontal plane) where an evacuee using the established escape route would normally make first contact with the ground.

(g) The means required in Sec. 25.809(f)(1) and (h) to assist the occupants in descending to the ground must be illuminated so that the deployed assist means is visible from the airplane.

(1) If the assist means is illuminated by exterior emergency lighting, it must provide--

(i) Illumination at each overwing emergency exit of not less than 0.02 foot-candle on the ground surface with the landing gear extended (measured in a horizontal plane) where an evacuee using the established escape route would normally make first contact with the ground;

and

(ii) Illumination at each non-over-wing emergency exit, of not less than 0.03 foot-candle (measured normal to the direction of the incident light) at the ground end of the assist means and, for each non-over-wing exit in the side of the fuselage, over a spherical surface 10 ° to either side of the center of the assist means and from 30° above to 5° below the 45° position of the assist means.

(2) If the assist means is self-illuminated, the lighting provisions--

(i) May not be adversely affected by stowage; and

(ii) Must provide sufficient ground surface illumination so that obstacles at the end of the assist means are clearly visible to evacuees.

(h) The energy supply to each emergency lighting unit must provide the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing.

(i) If storage batteries are used as the energy supply for the emergency lighting system, they may be recharged from the airplane's main electric power system: *Provided*, That, the charging circuit is designed to preclude inadvertent battery discharge into charging circuit faults.

(j) Components of the emergency lighting system, including batteries, wiring relays, lamps, and switches must be capable of normal operation after having been subjected to the inertia forces listed in Sec. 25.561(b).

(k) The emergency lighting system must be designed so that after any single vertical separation of the fuselage during crash landing--

(1) Not more than 25 percent of all electrically illuminated emergency lights required by this section are rendered inoperative, in addition to the lights that are directly damaged by the separation;

(2) Each electrically illuminated exit sign required under Sec. 25.811(d)(2) remains operative exclusive of those that are directly damaged by the separation; and

(3) At least one required exterior emergency exit light for each side of the airplane remains operative exclusive of those that are directly damaged by the separation.]

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