

centered about the longitudinal axis in the rearward direction.

(c) *Flashing characteristics.* The arrangement of the system, that is, the number of light sources, beam width, speed of rotation, and other characteristics, must give an effective flash frequency of not less than 40, nor more than 100 cycles per minute. The effective flash frequency is the frequency at which the airplane's complete anticollision light system is observed from a distance, and applies to each sector of light including any overlaps that exist when the system consists of more than one light source. In overlaps, flash frequencies may exceed 100, but not 180 cycles per minute.

(d) *Color.* Each anticollision light must be either aviation red or aviation white and must meet the applicable requirements of § 25.1397.

(e) *Light intensity.* The minimum light intensities in all vertical planes, measured with the red filter (if used) and expressed in terms of "effective" intensities, must meet the requirements of paragraph (f) of this section. The following relation must be assumed:

$$I_e = \frac{\int_{t_1}^{t_2} I(t)dt}{0.2 + (t_2 - t_1)}$$

where:

I_e =effective intensity (candles).

$I(t)$ =instantaneous intensity as a function of time.

t_2-t_1 =flash time interval (seconds).

Normally, the maximum value of effective intensity is obtained when t_2 and t_1 are chosen so that the effective intensity is equal to the instantaneous intensity at t_2 and t_1 .

(f) *Minimum effective intensities for anticollision lights.* Each anticollision light effective intensity must equal or exceed the applicable values in the following table.

Angle above or below the horizontal plane	Effective intensity (candles)
0° to 5°	400
5° to 10°	240
10° to 20°	80
20° to 30°	40
30° to 75°	20

[Doc. No. 5066, 29 FR 18291, Dec. 24, 1964, as amended by Amdt. 25-27, 36 FR 12972, July 10, 1971; Amdt. 25-41, 42 FR 36970, July 18, 1977]

§ 25.1403 Wing icing detection lights.

Unless operations at night in known or forecast icing conditions are prohibited by an operating limitation, a means must be provided for illuminating or otherwise determining the formation of ice on the parts of the wings that are critical from the standpoint of ice accumulation. Any illumination that is used must be of a type that will not cause glare or reflection that would handicap crewmembers in the performance of their duties.

[Amdt. 25-38, 41 FR 55468, Dec. 20, 1976]

SAFETY EQUIPMENT

§ 25.1411 General.

(a) *Accessibility.* Required safety equipment to be used by the crew in an emergency must be readily accessible.

(b) *Stowage provisions.* Stowage provisions for required emergency equipment must be furnished and must—

(1) Be arranged so that the equipment is directly accessible and its location is obvious; and

(2) Protect the safety equipment from inadvertent damage.

(c) *Emergency exit descent device.* The stowage provisions for the emergency exit descent devices required by § 25.810(a) must be at each exit for which they are intended.

(d) *Liferafts.* (1) The stowage provisions for the liferafts described in § 25.1415 must accommodate enough rafts for the maximum number of occupants for which certification for ditching is requested.

(2) Liferafts must be stowed near exits through which the rafts can be launched during an unplanned ditching.

(3) Rafts automatically or remotely released outside the airplane must be attached to the airplane by means of the static line prescribed in § 25.1415.

(4) The stowage provisions for each portable liferaft must allow rapid detachment and removal of the raft for use at other than the intended exits.

(e) *Long-range signaling device.* The stowage provisions for the long-range signaling device required by § 25.1415

§ 25.1415

must be near an exit available during an unplanned ditching.

(f) *Life preserver stowage provisions.* The stowage provisions for life preservers described in § 25.1415 must accommodate one life preserver for each occupant for which certification for ditching is requested. Each life preserver must be within easy reach of each seated occupant.

(g) *Life line stowage provisions.* If certification for ditching under § 25.801 is requested, there must be provisions to store life lines. These provisions must—

(1) Allow one life line to be attached to each side of the fuselage; and

(2) Be arranged to allow the life lines to be used to enable the occupants to stay on the wing after ditching.

[Doc. No. 5066, 29 FR 18291, Dec. 24, 1964, as amended by Amdt. 25-32, 37 FR 3972, Feb. 24, 1972; Amdt. 25-46, 43 FR 50598, Oct. 30, 1978; Amdt. 25-53, 45 FR 41593, June 19, 1980; Amdt. 25-70, 54 FR 43925, Oct. 27, 1989; Amdt. 25-79, 58 FR 45229, Aug. 26, 1993; Amdt. 25-116, 69 FR 62789, Oct. 27, 2004]

§ 25.1415 Ditching equipment.

(a) Ditching equipment used in airplanes to be certificated for ditching under § 25.801, and required by the operating rules of this chapter, must meet the requirements of this section.

(b) Each liferaft and each life preserver must be approved. In addition—

(1) Unless excess rafts of enough capacity are provided, the buoyancy and seating capacity beyond the rated capacity of the rafts must accommodate all occupants of the airplane in the event of a loss of one raft of the largest rated capacity; and

(2) Each raft must have a trailing line, and must have a static line designed to hold the raft near the airplane but to release it if the airplane becomes totally submerged.

(c) Approved survival equipment must be attached to each liferaft.

(d) There must be an approved survival type emergency locator transmitter for use in one life raft.

(e) For airplanes not certificated for ditching under § 25.801 and not having approved life preservers, there must be an approved flotation means for each occupant. This means must be within easy reach of each seated occupant and

14 CFR Ch. I (1-1-08 Edition)

must be readily removable from the airplane.

[Doc. No. 5066, 29 FR 18291, Dec. 24, 1964, as amended by Amdt. 25-29, 36 FR 18722, Sept. 21, 1971; Amdt 25-50, 45 FR 38348, June 9, 1980; Amdt. 25-72, 55 FR 29785, July 20, 1990; Amdt. 25-82, 59 FR 32057, June 21, 1994]

§ 25.1419 Ice protection.

If the applicant seeks certification for flight in icing conditions, the airplane must be able to safely operate in the continuous maximum and intermittent maximum icing conditions of appendix C. To establish this—

(a) An analysis must be performed to establish that the ice protection for the various components of the airplane is adequate, taking into account the various airplane operational configurations; and

(b) To verify the ice protection analysis, to check for icing anomalies, and to demonstrate that the ice protection system and its components are effective, the airplane or its components must be flight tested in the various operational configurations, in measured natural atmospheric icing conditions and, as found necessary, by one or more of the following means:

(1) Laboratory dry air or simulated icing tests, or a combination of both, of the components or models of the components.

(2) Flight dry air tests of the ice protection system as a whole, or of its individual components.

(3) Flight tests of the airplane or its components in measured simulated icing conditions.

(c) Caution information, such as an amber caution light or equivalent, must be provided to alert the flightcrew when the anti-ice or de-ice system is not functioning normally.

(d) For turbine engine powered airplanes, the ice protection provisions of this section are considered to be applicable primarily to the airframe. For the powerplant installation, certain additional provisions of subpart E of this part may be found applicable.

[Amdt. 25-72, 55 FR 29785, July 20, 1990, as amended by Amdt. 25-121, 72 FR 44669, Aug. 8, 2007]