(b) This section does not apply to balloons that incorporate a basket or gondola.

[Amdt. 31–2, 30 FR 3377, Mar. 13, 1965, as amended by Amdt. 31–3, 41 FR 55474, Dec. 20, 1976]

§ 31.65 Position lights.

(a) If position lights are installed, there must be one steady aviation white position light and one flashing aviation red (or flashing aviation white) position light with an effective flash frequency of at least 40, but not more than 100, cycles per minute.

(b) Each light must provide 360° horizontal coverage at the intensities prescribed in this paragraph. The following light intensities must be determined with the light source operating at a steady state and with all light covers and color filters in place and at the manufacturer's rated mimimum voltage. For the flashing aviation red light, the measured values must be adjusted to correspond to a red filter temperature of at least 130 °F:

(1) The intensities in the horizontal plane passing through the light unit must equal or exceed the following values:

Position light	Minimum intensity (candles)
Steady white	20
Flashing red or white	40

(2) The intensities in vertical planes must equal or exceed the following values. An intensity of one unit corresponds to the applicable horizontal plane intensity specified in paragraph (b)(1) of this section.

Angles above and below the horizontal in any vertical plane (degrees)	Minimum intensity (units)
0	1.00
0 to 5	0.90
5 to 10	0.80
10 to 15	0.70
15 to 20	0.50
20 to 30	0.30
30 to 40	0.10
40 to 60	0.05

(c) The steady white light must be located not more than 20 feet below the basket, trapeze, or other means for carrying occupants. The flashing red or white light must be located not less than 7, nor more than 10, feet below the steady white light.

(d) There must be a means to retract and store the lights.

(e) Each position light color must have the applicable International Commission on Illumination chromaticity coordinates as follows:

(1) *Aviation red—*

y is not greater than 0.335; and z is not greater than 0.002.

(2) *Aviation white—*

x is not less than 0.300 and not greater than 0.540;

y is not less than $x-0.040$ or $y_o-0.010$, whichever is the smaller; and

y is not greater than $x+0.020$ nor $0.636-0.0400\ x$;

Where y_o is the y coordinate of the Planckian radiator for the value of x considered.

[Doc. No. 1437, 29 FR 8258, July 1, 1964, as amended by Amdt. 31–1, 29 FR 14563, Oct. 24, 1964; Amdt. 31–4, 45 FR 60179, Sept. 11, 1980]

Subpart E—Equipment

§ 31.71 Function and installation.

(a) Each item of installed equipment must—

(1) Be of a kind and design appropriate to its intended function;

(2) Be permanently and legibly marked or, if the item is too small to mark, tagged as to its identification, function, or operating limitations, or any applicable combination of those factors;

(3) Be installed according to limitations specified for that equipment; and

(4) Function properly when installed.

(b) No item of installed equipment, when performing its function, may affect the function of any other equipment so as to create an unsafe condition.

(c) The equipment, systems, and installations must be designed to prevent hazards to the balloon in the event of a probable malfunction or failure.

[Amdt. 31–4, 45 FR 60180, Sept. 11, 1980]

Subpart F—Operating Limitations and Information

§ 31.81 General.

(a) The following information must be established:

(1) Each operating limitation, including the maximum weight determined under §31.14.

(2) The normal and emergency procedures.

(3) Other information necessary for safe operation, including—

(i) The empty weight determined under §31.16;

(ii) The rate of climb determined under §31.17, and the procedures and conditions used to determine performance;

(iii) The maximum vertical velocity, the altitude drop required to attain that velocity, and altitude drop required to recover from a descent at that velocity, determined under §31.19, and the procedures and conditions used to determine performance; and

(iv) Pertinent information peculiar to the balloon's operating characteristics.

(b) The information established in compliance with paragraph (a) of this section must be furnished by means of—

(1) A Balloon Flight Manual; or

(2) A placard on the balloon that is clearly visible to the pilot.

[Amdt. 31–4, 45 FR 60180, Sept. 11, 1980]

§31.82 Instructions for Continued Airworthiness.

The applicant must prepare Instructions for Continued Airworthiness in accordance with appendix A to this part that are acceptable to the Administrator. The instructions may be incomplete at type certification if a program exists to ensure their completion prior to delivery of the first balloon or issuance of a standard certificate of airworthiness, whichever occurs later.

[Amdt. 31–4, 45 FR 60180, Sept. 11, 1980]

§31.83 Conspicuity.

The exterior surface of the envelope must be of a contrasting color or colors so that it will be conspicuous during operation. However, multicolored banners or streamers are acceptable if it can be shown that they are large enough, and there are enough of them of contrasting color, to make the balloon conspicuous during flight.

§31.85 Required basic equipment.

In addition to any equipment required by this subchapter for a specific kind of operation, the following equipment is required:

(a) For all balloons:

(1) [Reserved]

(2) An altimeter.

(3) A rate of climb indicator.

(b) For hot air balloons:

(1) A fuel quantity gauge. If fuel cells are used, means must be incorporated to indicate to the crew the quantity of fuel in each cell during flight. The means must be calibrated in appropriate units or in percent of fuel cell capacity.

(2) An envelope temperature indicator.

(c) For captive gas balloons, a compass.

[Amdt. 31–2, 30 FR 3377, Mar. 13, 1965, as amended by Amdt. 31–3, 41 FR 55474, Dec. 20, 1976; Amdt. 31–4, 45 FR 60180, Sept. 11, 1980]

APPENDIX A TO PART 31—INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

A31.1 GENERAL

(a) This appendix specifies requirements for the preparation of Instructions for Continued Airworthiness as required by §31.82.

(b) The Instructions for Continued Airworthiness for each balloon must include the Instructions for Continued Airworthiness for all balloon parts required by this chapter and any required information relating to the interface of those parts with the balloon. If Instructions for Continued Airworthiness are not supplied by the part manufacturer for a balloon part, the Instructions for Continued Airworthiness for the balloon must include the information essential to the continued airworthiness of the balloon.

(c) The applicant must submit to the FAA a program to show how changes to the Instructions for Continued Airworthiness made by the applicant or by the manufacturers of balloon parts will be distributed.

A31.2 FORMAT

(a) The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.

(b) The format of the manual or manuals must provide for a practical arrangement.

A31.3 CONTENT

The contents of the manual or manuals must be prepared in the English language.