BL 7-9

Regulations on unmanned free balloons

Edition 3, 3 October 2014

In pursuance of § 82 and subsection (1) of § 151 of the Danish Air Navigation Act, cf. Consolidation Order no. 1036 of 28 August 2013, the following is stipulated on authority in pursuance of subsection (1) of § 152:

1. Reference documents

1.1 Commission Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010, in the following referred to as the SERA Regulation, referred to in this BL as the SERA Regulation.

1.2 ICAO Annex 2, Rules of the Air, latest edition.

1.3 BL 7-10, Regulations on definitions concerning air traffic service, latest edition.

1.3 The document mentioned in 1.1 can be found on the European Unions homepage www.eur-lex.europa.eu and on the Danish Civil Aviation and Railway Authority's homepage www.trafikstyrelsen.dk. The document mentioned in 1.3 can found on Retsinformation's (Legal Information's) homepage www.retsinfo.dk and on the Danish Civil Aviation and Railway's homepage www.trafikstyrelsen.dk. All documents mentioned in 1.1-1.3 can also be obtained by contacting

Danish Civil Aviation and Railway Authority
Carsten Niebuhrs Gade 43
DK-1577 Copenhagen V

2. Definitions

Unmanned free balloon:
An unmanned aircraft which in free flight is lighter than air and which is not driven by its own power during flight.

Unmanned free balloons are classified in the following categories:

a. Light: An unmanned free balloon carrying a payload of one or more packages with a combined mass of less than 4 kg, unless qualifying as a heavy balloon in accordance with c. 2., 3. or 4.

b. Medium: An unmanned free balloon carrying a payload of two or more packages with a combined mass of 4 kg or more, but less than 6 kg, unless qualifying as a heavy balloon in accordance with c. 2., 3. or 4.

c. Heavy: An unmanned free balloon carrying a payload which

1. has a combined mass of 6 kg or more, or

2. includes a package of 3 kg or more, or

3. includes a package of 2 kg or more with an area density of more than 13 g per square centimetre, or

4. uses a rope or other device for suspension of the payload that requires an impact force of 230 Newtons or more to separate the suspended payload from the balloon.

d. Toy balloon: An unmanned free balloon which

1. has a diameter measured anywhere on the balloon of maximum 40 cm,

2. is filled with helium or other non-flammable gas, and

3. does not carry a payload.

e. Tivoli balloon: An unmanned free balloon which

1. has a diameter measured anywhere on the balloon of maximum 65 cm or a horizontal/vertical diameter of maximum 40 cm/80 cm, respectively,

2. is filled with helium or other non-flammable gas, and

3. does not carry a payload.

f. Other balloon: An unmanned free balloon not covered by the categories mentioned in a.-e.

Note 1: The area density referred to in c. 3. is determined by dividing the total mass in grams of the payload package by the area in square centimetres of its smallest surface.

Note 2: See the appendix.

Other definitions:
Other definitions can be found in BL 7-10, Definitions concerning air traffic service.

3. Applicability

3.1 This BL shall apply to launching of unmanned free balloons within in the Faroe Islands and in Greenland as well as launching from Danish craft being outside any State's recognised area in international law. The regulations on unmanned free balloons covered by the categories: *Toy balloon, Tivoli balloon and Other balloon* shall also apply for launching in Denmark.

Note: The SERA Regulation also contains regulations on launching unmanned free balloons of the category Light, Medium and Heavy, which also apply for Denmark, in addition to the regulations in this Regulation for the categories: Toy balloon, Tivoli balloon and Other balloon which are not regulated in the SERA Regulations.

3.2 When overflying a foreign State's territory with unmanned free balloons, any deviating regulations stipulated by the foreign State in question, shall, however, be observed.

4. General

4.1 An unmanned free balloon must not be operated without permission from the Danish Civil Aviation and Railway Authority. This shall, however, not apply to operation of an unmanned free balloon categorized as light, toy balloon or Tivoli balloon on the conditions mentioned in 5.1 and 5.9, respectively.

4.1.1 An application for permission shall contain the information mentioned in 6.1.2.

4.2 An unmanned free balloon must not be operated across another State's sea and land territory without permission from the State concerned.

4.2.1 This shall, however, not apply when the unmanned free balloon is categorized as light, exclusively is used for meteorological purposes and operated by a meteorological service provider approved by the Danish Civil Aviation and Railway Authority or by the Defence.

4.3 An unmanned free balloon categorized as heavy must not be operated across international waters without appropriate authorization from the ATS authority concerned.

4.4 An unmanned free balloon must not be operated in such a manner that it, or its payload, creates a hazard to persons or property on the ground.

5. Operational limitations and equipment requirements

5.1 An unmanned free balloon categorized as light may, without authorization from the Danish Civil Aviation and Railway Authority be operated across Danish territory on the following conditions:

a. The distance to an aerodrome shall be at least 5 km.

b. The flight level must not exceed 100 m above terrain.

c. The flight must not cause inconvenience to other aviation.

5.1.1 If the conditions in 5.1 cannot be met, an unmanned free balloon categorized as light must only be operated upon authorization from the Danish Civil Aviation and Railway Authority, cf. 4.1. The Danish Civil Aviation and Railway Authority may attach special conditions to such an authorization.

5.2 An unmanned free balloon categorized as medium or heavy must not be launched in a manner that will cause it to fly lower than 300 m (1,000 ft) over congested areas, including summer cottage areas, inhabited camping sites and areas with an open-air assembly of persons.

5.3 An unmanned free balloon categorized as heavy must not be operated without authorization from the appropriate ATS authority at or through any level below 18,000 m (60,000 ft) pressure altitude at which

a. there are clouds or obscuring phenomena of more than 4/8 coverage, or

b. the horizontal visibility is less than 8 km (5 NM).

5.4 An unmanned free balloon categorized as heavy and equipped with a training antenna must no be launched unless the antenna has coloured pennants or streamers that are attached at not more than 15 m intervals.

5.5 An unmanned free balloon categorized as heavy must not be launched unless it is equipped with at least two payload flight-termination devices or systems, whether automatic or operated by telecommand, that operate independently of each other.

5.5.1 The balloon envelope shall be equipped with

a. radar reflective devices or material that will present an echo from a surface radar operating between the 200 MHz and 2,700 MHz frequency range and/or

b. such other devices as will permit continuous tracking by the owner or user beyond the range of surface radar.

5.6 An unmanned free balloon categorized as heavy must not be operated

a. in an area where ground-based SSR equipment is in use, unless it is equipped with an SSR transponder with mode C which is either continuously operating or which can be turned on when necessary, or

b. in an area where ground-based ADS-B equipment is in use, unless it is equipped with ADS-B sender with automatic altitude reporting which either functions continuously or may be started when necessary.

5.7 An unmanned free balloon categorized as heavy must not be operated below 18,000 m (60,000 FT) pressure altitude outside the periods stated in BL 7-15, unless the balloon and anything it is carrying are lighted, whether or not they become separated during the operation.

5.8 An unmanned free balloon categorized as heavy and equipped with a suspension device (other than a highly conspicuously coloured open parachute) more than 15 m long, must not be operated between sunrise and sunset below 18,000 m (60,000 ft) pressure-altitude unless the suspension device is coloured in alternate bands of highly diverging colours or has coloured pennants attached.

5.9 An unmanned free balloon categorized as toy balloon or Tivoli balloon may be operated across Danish territory without authorization from the Danish Civil Aviation and Railway Authority on the following conditions:

a. Not more than 50 toy balloons or 5 Tivoli balloons may be launched at the same time.

b. The balloons must not be tied together.

c. The balloons must not be equipped with an appendage besides a short string.

d. Any messages - on small pieces of paper - shall be put into the balloons.

e. The distance to an aerodrome shall be at least 5 km.

5.9.1 If the conditions in 5.9 cannot be met, an unmanned free balloon categorized as a toy balloon may only be operated with the Danish Civil Aviation and Railway Authority’s authorization, cf. 4.1. The Danish Civil Aviation and Railway Authority may attach special conditions to such an authorization.

5.10 An unmanned free balloon categorized as other balloon may only be operated with the Danish Civil Aviation and Railway Authority’s authorization, cf. 4.1. The Danish Civil Aviation and Railway Authority may attach special conditions to such an authorization.

6. Flight notification of unmanned free balloons categorized as medium or heavy

6.1 Pre-flight notification

6.1.1 The appropriate ATS unit shall be notified of intended flights with unmanned free balloons categorized as medium or heavy not later than seven days before the date of the intended flight.

Note: Notification may be made by submitting a copy of the authorization granted by the Danish Civil Aviation and Railway Authority, cf. 4.1, to the appropriate ATS unit.

6.1.2 Notification of a flight shall include the following information:

a. Balloon flight identification or project code name.

b. Balloon classification and description.

c. SSR code, aircraft address or NDB frequency.

d. Owner's or user's name and telephone number.

e. Launch site.

f. Estimated time of launch (or estimated times of commencement and completion of launch).

g. Number of balloons to be launched and the scheduled interval between launches.

h. Expected direction of ascent.

i. Cruising level (pressure-altitude).

j. Estimated time and point for passage of 18,000 m (60,000 FT) pressure-altitude or for reaching cruising level if lower. If the operation consists of continuous launchings, the time to be included is the estimated time at which the first and the last balloon in the series will reach the appropriate level.

k. Estimated date and time of termination of the flight and the planned location of impact area. In case of long flights where the date and time of termination of the flight and the planned impact area cannot be forecast with precision, the term "long duration" shall be used. If there is to be more than one location of impact, each location shall be listed together with the estimated time of impact. If there is to be a series of continuous impacts, the time to be included shall the estimated time of the first and the last in the series.

6.1.3 Any changes in the pre-launch information shall be notified to the ATS unit without delay and not later than 6 hours before the estimated time of launch. If it is a case of solar or cosmic disturbance investigations involving a critical time element, the notification of such changes should be given no later than 30 minutes before the commencement of the launch.

6.1.4 When notification has been given about a contemplated flight, cf. 6.1.1, the owner or user shall without delay notify the ATS unit if the flight is cancelled.

6.2 Notification of launch

6.2.1 Immediately after the launching of an unmanned free balloon categorized as medium or heavy, the owner or user shall notify the ATS unit of the following:

a. Balloon flight identification and project code name.

b. Launch site.

c. Actual time of launch.

d. Estimated time and point of passage of 18,000 m (60,000 FT) pressure altitude or of reaching cruising level, if this is lower.

e. Any changes to the information notified in accordance with 6.1.2 g. and h.

6.3 Notification of position

6.3.1 The owner or user of an unmanned free balloon categorized as heavy shall monitor the flight path of the balloon and forward reports of the balloon's position as requested by the ATS unit. Unless the ATS unit requires position reports for the balloon at shorter intervals, the position shall be recorded every 2 hours for flights at or below 18,000 m (60,000 FT) pressure altitude and every 24 hours for flight above this level.

6.3.2 If a position cannot be recorded in accordance with 6.3.1, the owner or user shall immediately notify the appropriate ATS unit. This notification shall include the last recorded position. The ATS unit shall be notified immediately when tracking of the balloon is re-established.

6.4 Notification of descent and termination

6.4.1 One hour before beginning of a planned descent of an unmanned free balloon categorized as heavy, the owner or user shall forward to the appropriate ATS unit the following information regarding the balloon:

a. Current geographical position.

b. Current level (pressure-altitude)

c. Estimated time of passage of 18,000 m (60,000 FT) pressure-altitude.

d. Estimated time and location of ground impact.

6.4.2 The owner or user of an unmanned free balloon categorized as medium or heavy shall notify the appropriate ATS unit when the operation is terminated.

7. Termination of operation with unmanned free balloons categorized as heavy

The owner or user of an unmanned free balloon categorized as heavy shall, after co-ordination with the appropriate ATS unit, terminate an operation with payload in the following cases:

a. When it becomes known that the weather conditions are less than those prescribed for the operation.

b. If a malfunction or any other reason makes further operation hazardous to other air traffic or to persons or property on the ground.

c. Prior to entry into the airspace over another State's territory, unless authorization has been obtained.

8. Exemption

The Danish Civil Aviation and Railway Authority may in quite exceptional cases grant exemption from the regulations in this BL when it is deemed compatible with the considerations on which the regulations in question are based, including international regulations in the area.

9. Access to complain

Decisions taken by the Danish Civil Aviation and Railway Authority in accordance with this BL cannot be brought before the Minister for Transport or other administrative authority.

10. Punishment

10.1 Violation of the regulations in this BL will be punished in accordance with subsection 8 of § 149 of the Air Navigation Act.

10.2 Penalty may be imposed on companies etc. (legal persons) in pursuance of the rules in Chapter 5 of the Danish Criminal Code.

11. Implementation

11.1 This BL comes into force on 4 December 2014.

11.2 At the same time BL 7-9, 2 edition of 9 May 2026 with later amendments are repealed.

Danish Civil Aviation and Railway Authority, 3 October 2014

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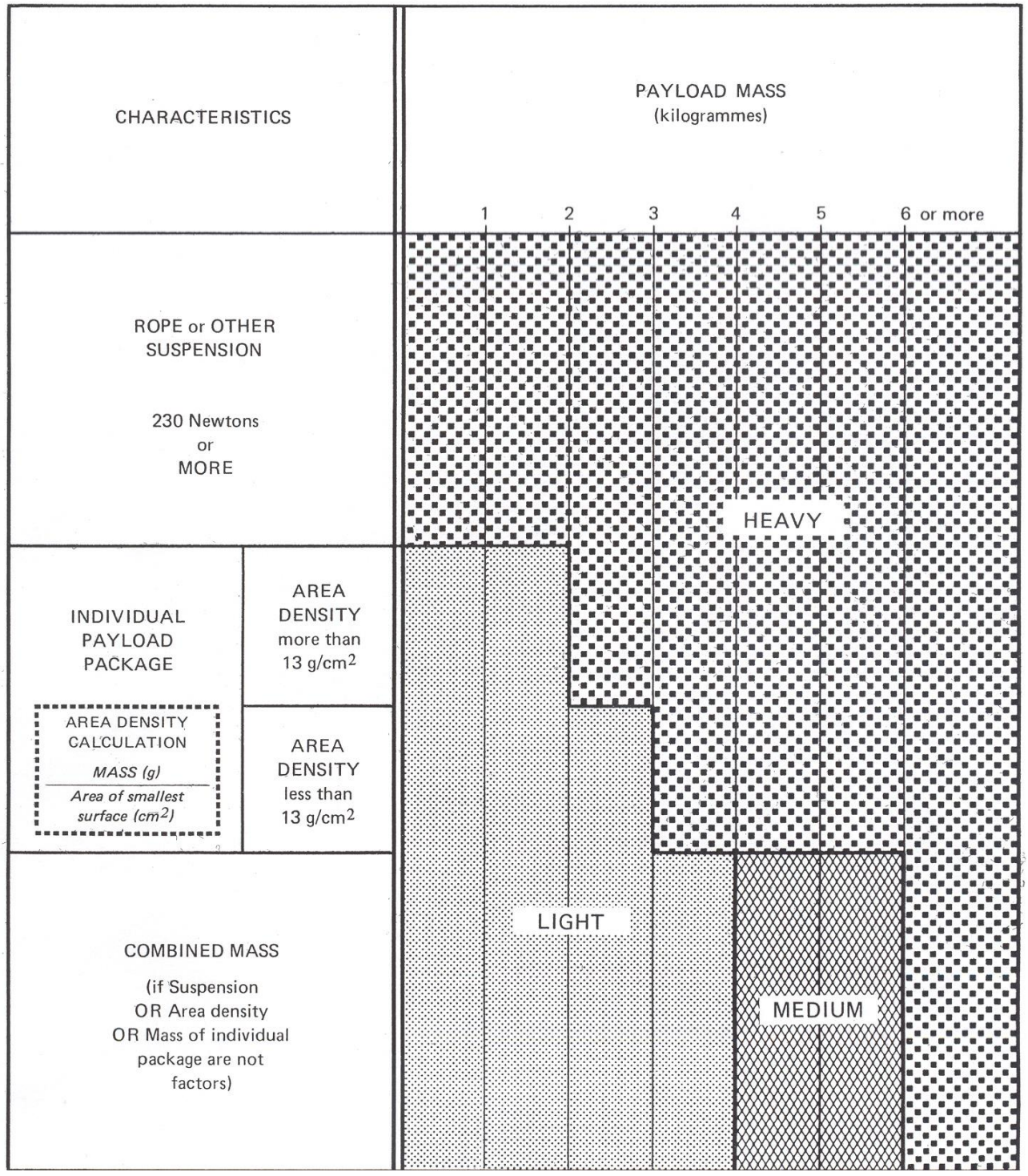
/ Per Schmock

Appendix


CHARACTERISTICS
PAYLOAD MASS
(kilogrammes)
1
2
3
4
5
6 or more
ROPE or OTHER SUSPENSION
230 Newtons
or
MORE
HEAVY
INDIVIDUAL PAYLOAD PACKAGE
AREA DENSITY more than 13 g/cm2
AREA DENSITY CALCULATION
MASS (g)
Area of smallest surface (cm2)
AREA DENSITY less than 13 g/cm2
LIGHT
COMBINED MASS
(if Suspension OR Area density OR Mass of individual package are not factors)
MEDIUM