



Civil Aviation Authority
SAFETY NOTICE
Number: SN-2011/018



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Balloon Operations – Safety Matters

This Safety Notice contains recommendations regarding operational safety.

Recipients must ensure that this Notice is copied to all members of their staff who need to take appropriate action or who may have an interest in the information (including any 'in-house' or contracted maintenance organisations and relevant outside contractors).

Applicability:	
Aerodromes:	Not primarily affected
Air Traffic:	Not primarily affected
Airspace:	Not primarily affected
Airworthiness:	Not primarily affected
Flight Operations:	All Balloon AOC Holders
Licensed/Unlicensed Personnel:	All Commercial Balloon Pilots

1 Introduction

- 1.1 The purpose of this Safety Notice is to provide balloon operators and pilots with the latest guidance concerning balloon operations with particular emphasis on passenger-related matters and advice on pilot training and pilot decision-making.

2 Protection of Balloon Passengers During the Landing Phase

- 2.1 Following an Air Accidents Investigation Branch (AAIB) Recommendation, the CAA, in conjunction with the British Balloon and Airship Club (BBAC), were initially asked to require balloon baskets certified for Public Transport flights, where practicable, to contain dense foam seating blocks and additional padding to reduce the effect of impact with the basket structure during landing. Following this recommendation the CAA engaged with the European Aviation Safety Agency (EASA) concerning an associated recommendation made to the Agency and had discussions with the BBAC, the British Association of Balloon Operators (BABO), UK balloon operators and UK balloon manufacturers, culminating in a well-attended stakeholder meeting in February 2010.
- 2.2 The overall consensus from the meeting and earlier discussions was that the extensive use of computer simulation by the scientific study had produced inconclusive results and that dense foam seating blocks and extra padding were not a panacea in preventing the effects of impact with the basket structure during a balloon landing. Nevertheless, it was agreed that reasonable space in balloon baskets must be provided for all occupants, with regard to both comfort during the flight and safety during the landing phase.

- 2.3 A number of operators are now using large balloon baskets equipped with dense foam seating blocks and extra padding. It is essential that these items are supplied through the balloon manufacturer and are fitted and operated in accordance with the manufacturer's flight manual and relevant supplements.
- 2.4 The passenger landing position is of vital importance. In accordance with **CAP 611 AOC – Operation of Balloons**, Chapter 4, detailed instructions for pilots must be contained within the passenger briefings appendix to an Air Operator Certificate (AOC) holder's operations manual and be in accordance with the instructions contained in the manufacturer's flight manual. Where dense foam seating blocks are used, specific instructions for their use must be within the operations manual. If the passenger landing position for open baskets and that for compartmented baskets are different, again clear instructions must be written in the operations manual.
- 2.5 Operators should undertake a review of company balloon baskets taking due regard of the above guidance and of the maximum permitted number of occupants within each basket, as detailed in the operations manual.

3 Passenger Briefings

- 3.1 Article 88 of the Air Navigation Order (ANO) 2009 requires the commander of a balloon to ensure that a passenger briefing is given. This briefing is required to be delivered in a clear and concise manner and all passengers should have heard and understood the briefing.
- 3.2 This briefing should be undertaken at a point where the full attention of all passengers can be commanded, for example prior to the commencement of the cold inflation of the balloon. Some operators prefer embarking the passengers in the upright basket at this stage for the safety briefing, which will then facilitate the allocation of passengers to specific compartments and also an assessment as to which of them can easily climb into the basket and which of them may need a little more time or assistance.
- 3.3 The briefing will need to commence with the statement "this is an important safety briefing" and must cover embarkation, and routine and emergency evacuation procedures. The landing position(s) must be clearly demonstrated by a competent person. The briefing should finish with a check that all have understood it and questions should always be invited.
- 3.4 If any passengers are to be pre-loaded in the basket prior to the hot inflation of the balloon envelope, the briefing should explain how and when to embark with the basket on its side and the emergency evacuation procedure during the inflation period. If any passengers are invited to assist with the inflation of the balloon, again a separate briefing must be given and appropriate safety clothing (e.g. gloves) provided.
- 3.5 When the balloon is inflated and passengers embarked, a practice of the landing position(s) should be undertaken. This should be repeated at the point in the flight where the commander starts to look for a suitable landing location. However, if any practice approaches are undertaken at any point during the flight, the passengers should be instructed to be ready to adopt the pre-briefed position(s) without delay.
- 3.6 The pilot's passenger briefing is assessed annually as part of the Operator Proficiency Check (OPC / Base and Line Check) as required by Schedule 8 of the ANO 2009. However, Chief Pilots should monitor such briefings from company pilots when the opportunity allows.
- 3.7 A well-prepared and well-delivered passenger briefing can add to the overall safety of the flight. The use of visual aids to assist the briefing, for example laminated briefing cards, may also be considered, but they do not replace the need for a comprehensive verbal briefing.

4 Passenger Fitness to Fly

- 4.1 Balloon landings often take place at unprepared sites and may occasionally be bumpy for the occupants, especially in higher wind conditions and when it is likely that the basket may tip over and drag along the ground.
- 4.2 In order that prospective passengers can make an informed decision as to whether or not to undertake a balloon flight, balloon operators and their agents are recommended to make passengers aware of the following:
- a) Ballooning is an outdoor activity, normally occurring in the open countryside.
 - b) Ballooning requires that participants have a degree of fitness and mobility.

This information should be given when the flight is initially booked, as well as being a key part of the pre-flight passenger briefing.

- 4.3 The commander on any flight may decline to carry any passengers (including children and persons with reduced mobility), if their presence might impede:
- the crew in their duties;
 - access to emergency equipment; or
 - the emergency evacuation of the balloon,
- and/or they are:
- unable to adopt the briefed landing position;
 - too small to see over the edge of the basket; or
 - unable to fully understand the content of safety briefings.

5 Pilot Training and Decision-Making

- 5.1 A recent review of the CAA Mandatory Occurrence Report database suggests that some reportable balloon accidents and occurrences may have been contributed to by poor pilot decision-making. Pilots are human and do make mistakes.
- 5.2 As safety is of paramount importance, it is important that steps are taken to reduce the frequency of human error. All balloon AOC holders are required by Schedule 8 of the ANO 2009 to include details of their Accident Prevention and Flight Safety Programme within their company operations manual. Such Programmes normally form a part of an operator's Safety Management System.
- 5.3 Pilot training, both initial training and continuation training, is important to ensure the highest possible level of safety. The required annual examination flight, with a Type Rating Examiner, may be supplemented with accompanied flights with the company Chief Pilot or Training Pilot, as detailed in paragraph 9.1.2 of many AOC (Balloon) operations manuals. Also, following an accident or occurrence, a flight with the company Chief Pilot is strongly recommended to ensure that highest possible standards of flying are being maintained.
- 5.4 Where pilots are moving up to larger balloons, an internal continuation-training programme should be put into place. It is particularly important that less experienced pilots fully appreciate both the dynamics of significantly larger balloons and the management of larger numbers of passengers.
- 5.5 Operators are reminded that should an incident occur during any flight of AOC company balloons it may need to be the subject of a Mandatory Occurrence Report. Operators are recommended to re-read [CAP 382](#) *The Mandatory Occurrence Reporting Scheme*.

6 Summary

- 6.1 Operators should undertake a review of company balloon baskets taking due regard of the guidance in this Notice and of the maximum permitted number of occupants within each basket, as detailed in the operations manual.
- 6.2 Operators should review their passenger briefing material in company operations manuals, including passenger landing positions.
- 6.3 Operators should ensure that prospective passengers are aware that ballooning is an outdoor activity, normally occurring in the open countryside, requiring a degree of fitness and activeness from participants.
- 6.4 Operators should review their pilot continuation-training policy to ensure continuing postholder oversight.

7 Queries

- 7.1 As a result of this communication, any queries or requests for further guidance should be addressed to the FOI(GA) Flight Standards Officer at the following e-mail address: GA@caa.co.uk.

8 Cancellation

- 8.1 This Safety Notice shall remain in force until further notice.