



Civil Aviation Authority
SAFETY DIRECTIVE
Number: SD-2021/004



Version 2 Issued: 29 June 2026

Version 2 has been revised from the first version published in September 2021 to take into account safety arising from a fatal balloon accident at Ombersley Court, Worcestershire on 25 June 2023. A number of editorial changes have also been made.

Non-Part 21 Amateur-Built Balloon and Airship Operational Limitations

Section 3 of this Safety Directive contains an Operational Directive mandating action required to maintain an acceptable level of safety.

Recipients must ensure that this Directive 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 organisation and relevant outside contractors).

Applicability:	
Aerodromes:	Not affected
Air Traffic:	Not affected
Airspace:	Not affected
Airworthiness:	Constructors of amateur-built balloons and airships
Flight Operations:	Operators of amateur-built balloons and airships
Licensed Personnel:	Pilots of amateur-built balloons and airships

1. Introduction

- 1.1. This safety and operational directive contains mandatory action that is required to maintain an acceptable level of safety. It is issued in accordance with article 248 of the Air Navigation Order 2016 ("the Order"). Recipients must ensure that the directive is copied to all relevant individuals who may have an interest in the information.
- 1.2. The directive introduces limitations relating to the size, performance and operational use of amateur-built balloons and airships. Such balloons are not otherwise subject to statutory airworthiness requirements under the Order, although regulations apply relating to personnel licensing, the operation of aircraft and Rules of the Air.
- 1.3. The directive has been revised from the first version published in September 2021, reflecting safety issues arising from a fatal balloon accident at Ombersley Court, Worcestershire on 25 June 2023. Several editorial changes have also been made.
- 1.4. Aircraft required to be certified and operated in accordance with the former European aviation regulations, as assimilated into UK law, are known as "Part 21 aircraft". Aircraft not subject to the assimilated European regulations are known as "non-Part 21 aircraft" and fall under the provisions of the Order. The criteria for an aircraft to be considered non-Part 21 are listed in Annex I of UK

Regulation (EU) No. 2018/1139 (“the UK Basic Regulation”) – this includes aircraft where at least 51% of the fabrication and assembly tasks are performed by an amateur, or a non-profit making association of amateurs, for their own purposes and without any commercial objective.

2. Background

- 2.1. Over 70% of all amateur-built balloons on the UK register have been added in the last ten years, and there are now several balloons with 90,000 cu ft (approximately 2550 m³) envelopes and capable of carrying at least four people. Although the CAA has not seen the same increase in the number of amateur-built airships, these types are included in this directive as it is recognised that balloons can be readily converted to airships by adding means of propulsion and steering. To ensure the limitations introduced via this directive are not circumvented, the CAA has made it applicable to both balloons and airships that are amateur built.
- 2.2. Unlike other amateur-built aircraft types capable of carrying multiple people, amateur-built balloons and airships are not required to hold a national permit to fly when used for non-commercial purposes, and there is no applicable airworthiness assurance system. In comparison, factory-built balloons can be unregulated with respect to airworthiness only up to 42,377 cu ft (1,200 m³).
- 2.3. The CAA has not seen the need to propose airworthiness regulation for amateur-built balloons and airships while they remained small in both size and quantity. However, the recent increase in the quantity of multi-occupancy amateur-built balloons has given the CAA cause to re-evaluate our policy in this area. Furthermore, the CAA has received multiple inquiries from individuals interested in building balloons larger than 90,000 cu ft, further reinforcing the apparent trend of amateur-built balloons becoming larger.
- 2.4. In assessing risk, both the probability and severity of an accident/incident are considered. Assuming the probability of an accident/incident remains constant with aircraft size, the severity of an accident/incident increases with aircraft size as more people are potentially involved. Based on the recent increase in the quantity of multi-occupancy amateur-built balloons, this directive introduces limitations on amateur-built balloon and airship size and operations.
- 2.5. In developing the directive, the CAA has sought a balance between safety and operational freedom. The comments of the British Balloon and Airship Club (BBAC) and other active members of the UK ballooning community have been taken into consideration. Furthermore, the CAA recognises the strong safety record that UK operators of balloons and airships have established over many years.
- 2.6. All amateur-built balloons and airships on the UK register will be able to continue operating on their current basis, although will be limited to a maximum occupancy of four people, including the pilot. Based on the size of the largest amateur-built balloons and airships currently on the UK register, this operational limitation is deemed to have minimal impact. Furthermore, amateur-built balloons and airships will be limited to a maximum envelope size of 90,000 cu ft (approximately 2550 m³). No amateur-built balloons or airships currently on the UK register will be adversely impacted by this size limit. These size and occupancy limits will remain in place until such time as the CAA, in consultation with the balloon community, consider whether an airworthiness assurance system is required and in what form.
- 2.7. In determining an occupancy limit and other limitations for amateur-built balloons and airships, the CAA considered the size and safety record of balloons and airships currently on the UK register with that of other amateur-built General Aviation types used for non-commercial activity. Apart from some single-seat platforms, such as Single-Seat Deregulated aeroplanes and Self-Propelled Hang Gliders, a permit to fly is required for all other amateur-built types. For amateur-built aeroplanes, a four-seat limit is specified in CAP 659, paragraph 3.2.1. A four-person

occupancy limit for amateur-built balloons and airships represents a reasonable compromise that mitigates risk while continuing to allow builders and pilots to share their hobby with others.

- 2.8. Flight training towards the issue of a Balloon Pilot Licence (BPL) in an amateur-built balloon may not be consistent with an acceptable level of airworthiness safety for the platform. To mitigate this, the directive provides that should an amateur-built balloon be intended to be used for ab initio training towards the BPL, it must have been issued with a national permit to fly in accordance with BCAR Section A, Chapter A3-7 and be in possession of a valid certificate of validity.

3. Operational Directive

- 3.1. The Civil Aviation Authority (CAA), in exercise of its powers under article 248 of the Air Navigation Order 2016 directs constructors, operators or pilots of any non-Part 21 amateur-built balloon or airship which is:

- (a) registered in the United Kingdom; or
- (b) registered other than in the UK and intending to conduct flights within UK airspace¹,

to comply with the requirements set out in paragraphs 3.2, 3.3 and 3.4.

- 3.2. Constructors, operators or pilots of non-Part 21 amateur-built balloons or airships are:

- (a) limited to carrying a maximum of four occupants (pilot plus three passengers), while respecting occupancy and Maximum Take-Off Mass (MTOM) limitations stated in the Flight Manual (FM) or Pilot's Operating Handbook (POH);
- (b) limited to operating balloons and airships with a maximum design volume of 90,000 cu ft (approximately 2,550 m³); and
- (c) limited to a maximum rate of ascent/descent rate of 800 ft/min.

- 3.3. Construction and operation of amateur-built balloons is limited to conventional rotationally symmetrical 'natural shape' envelopes, often referred to as the traditional 'inverted teardrop'. 'Racer' and 'special shape' type envelopes are prohibited. If in doubt as to what type of envelopes are permitted, advice should be sought from the CAA prior to commencing construction.

- 3.4. Amateur-built balloons intended to be used for ab initio training towards the Balloon Pilot Licence in accordance with UK Regulation (EU) No. 2018/395 must have been issued with a National Permit to Fly in accordance with BCAR Section A, Chapter A3-7, and be in possession of a valid Certificate of Validity.

4. Queries

- 4.1. Any queries or requests for further guidance associated with this communication should be addressed to ga@caa.co.uk.

5. Cancellation

- 5.1. This Directive will remain in force unless revoked or amended by the CAA.

Signed: Michael MacDonald
Head of International Safety and General Aviation

Date: 29 June 2026

¹ A foreign aircraft exemption is required for flight in UK airspace. Details on how to apply can be found [here](#).