



## **European Aviation Safety Agency**

### **EXPLANATORY NOTE**

#### **CS-31HB Initial issue**

## **1. General**

### **Background**

On 8 April 2008 Regulation (EC) No 216/2008 of 20 February 2008<sup>1</sup> (The Basic Regulation) entered into force. In addition the Commission has adopted the necessary rules (Commission Regulations) for the implementation of the Basic Regulation for the certification and continuing airworthiness of products, parts and appliances<sup>2</sup>.

Pursuant to Article 18 of the Basic Regulation the European Aviation Safety Agency (the Agency) shall, where appropriate, issue certification specifications, including airworthiness codes and acceptable means of compliance, as well as guidance material for the application of the Basic Regulation and its implementing rules. The Commission Regulations specify which certification specifications shall be issued.

### **Agency measures**

Certification Specifications (CS) are used to demonstrate compliance with the Basic Regulation and its implementing rules. These include, in particular:

- airworthiness codes, which are standard technical interpretations of the airworthiness essential requirements contained in Annex I to the Basic Regulation; and
- Acceptable Means of Compliance (AMC), which are non-exclusive means of demonstrating compliance with the airworthiness codes or implementing rules.

AMC illustrate a means, but not the only means, by which a specification contained in the airworthiness code or a requirement of an implementing rule, can be met. Satisfactory demonstration of compliance using a published AMC shall provide for presumption of compliance with the related specification or requirement; it is a way to facilitate certification tasks for the applicant and the competent authority.

Guidance material (GM) is issued by the Agency to assist in the understanding of the Basic Regulation, its Implementing Rules and CSs.

### **General structure and format**

This CS consists of two "Books". Book 1 is referred to as "airworthiness code" and contains the Agency's technical interpretation of the essential requirements. Book 2 contains the means acceptable to the Agency for the applicant to show compliance with the airworthiness code. Each Book is divided into "Subparts".

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<sup>1</sup> Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC. (OJ L 79, 19.03.2008, p. 1).

<sup>2</sup> Commission Regulation (EC) 1702/2003 of 24 September 2003 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production (OJ L 243, 27.9.2003, p. 6).

## Publication

The full text of certification specifications, including airworthiness codes and acceptable means of compliance as well as guidance material are available on the [website](#) of the European Aviation Safety Agency.

For more information contact the Agency at: [RPS@easa.europa.eu](mailto:RPS@easa.europa.eu).

## 2. Consultation on draft proposals

CS-31HB for Hot Air Balloons is developed by the Agency, following a structured process as required by article 52.1 of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as "The Rulemaking Procedure"<sup>3</sup>.

Executive Director Decision 2009/005/R adopts the initial issue of CS-31HB: certification specifications, including airworthiness codes and acceptable means of compliance, for Hot Air Balloons, that is the output from the following Agency's rulemaking task:

Rulemaking Task No.	TITLE	NPA No.
31.001	31.001 Balloons, development of the Certification Specifications for hot air balloons (CS-31HB).	07-2006

The Notice of Proposed Amendment (NPA) has been subject to consultation in accordance with Article 52 of the Basic Regulation and Article 15 of the Rulemaking Procedure established by the Management Board. For detailed information on the proposed changes and their justification please consult the above NPA 07-2006<sup>4</sup> which is available on the Agency's website.

The Agency has addressed and responded to the comments received on the NPA. The responses are contained in a comment-response document (CRD) which has been produced for this NPA (CRD 07-2006<sup>5</sup>) and which is also available on the Agency's web-site.

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<sup>3</sup> Management Board decision concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications and guidance material ("Rulemaking Procedure"), EASA MB 08-2007, 13.6.2007.

<sup>4</sup> See Rulemaking Archive page: [http://www.easa.europa.eu/ws\\_prod/r/r\\_archives.php](http://www.easa.europa.eu/ws_prod/r/r_archives.php)

<sup>5</sup> See Rulemaking Archive page: [http://www.easa.europa.eu/ws\\_prod/r/r\\_archives.php](http://www.easa.europa.eu/ws_prod/r/r_archives.php)

In response to the CRD 07-2006, the Agency received the following substantive reactions, which are reproduced below together with the Agency's response:

Reaction to	Reaction by	Reaction	Response
CS 31HB.59	Lindstrand Hot Air Balloons Ltd United Kingdom	<p>CS 31HB.59 baskets (a) to be removed</p> <p><b>Justification:</b> The entanglement of operating lines is covered in CS31HB.57(a)(1). Therefore the introduction of a design requirement to restrict the rotation of the envelope independently from the basket, purely for this reason is superfluous. This should not be used as an opportunity to prevent the design of a rotational basket.</p> <p>It is technically feasible to create a rotating basket / envelope, without entanglement of the lines and this concept should not be proscribed against in this document.</p>	<p><b>Partially Accepted</b> The reaction is correctly stating that CS 31HB.57(a)(1) is addressing a requirement precluding entanglement of operating lines. CS 31HB.59(a) is however a basket requirement. The basket may rotate independent from the envelope provided that: (1) This rotation is controlled by the pilot. (2) Rotation will not cause entanglement of operating lines. Because of possible misinterpretation, as expressed by this reaction, this subparagraph is reworded for clarity.</p>
AMC 31HB.59(a) & 31HB.59(e)	Lindstrand Hot Air Balloons Ltd United Kingdom	<p>AMC 31HB.59(a) paragraph 1 to be removed, paragraph 2 to be inserted into AMC 31HB.59(e) and reworded as follows.</p> <p>‘It should be noted that circular baskets or baskets with more than 6 sides may be rotationally unstable during fast drag landings. This may present a risk to occupants’</p> <p><b>Justification:</b> Having addressed changes to CS 31HB.57(1)(a) in relation to operating line entanglement the comment in the associated AMC 31HB.59(a) relating to the shape of the basket would be more appropriately positioned within AMC 31HB.59(e).</p> <p>This AMC relates to the behavior of baskets during landing and the protection of occupants in this phase of flight.</p>	<p><b>Partially Accepted</b> The first paragraph of AMC 31HB.59(a) is highlighting the risk of operating lines becoming entangled when the basket would rotate uncontrollable. The second paragraph highlights that this can also be a risk during landing because of the shape of the basket. Both are related to rotation of the basket independent from the envelope and are therefore kept as AMC 31HB.59(a).  The proposed addition to this AMC is considered valuable information related to the protection of basket occupants. This is therefore added to AMC HB.59(e)</p>