

Comment Response Document (CRD) to Proposed Special Condition ref. SC-D29.855-01 Issue 01 on Installation of an external baggage compartment not fitted with a fire or smoke detector on a CS-29 rotorcraft

1. Summary of the outcome of the consultation

During the public consultation of the above referenced proposed Special Condition from 26 October 2022 to 16 November 2022, EASA has received: 9 (groups of) comments - from 4 different commenters.

2. Individual (groups of) comments and responses

(General Comments)	-
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comment	10	comment by: <i>TCCA , National Aircraft Certification</i>	<p>The flammability of the compartment material is not defined. Since 2a allows dangerous goods to be potentially carried (as “Alternatively..” is used), then guidance for testing is expected.</p> <p>Suggested Change and Rationale Define as Fire resistant or Fireproof or alternative</p> <p>There is no indication in the SC for a required EBC sealed/leakage check as part of periodic maintenance check of the EBC.</p> <p>Suggested Change and Rationale An item shall include for required maintenance sealed/leakage check of the EBC.</p>
Response			<p>Partially accepted - The special condition applies in lieu of CS 29.855(d). The requirements of CS 29.855, except for subparagraph (d), remain applicable, including the flammability requirements of CS 29.855(a)(1).</p> <p>Section 2.(a) of the special condition has been revised to make the requirement for operating limitations prohibiting the carriage of dangerous goods inside the EBC mandatory instead of alternative.</p> <p>The special condition has been revised [new section (h) added] to require the definition of maintenance tasks to ensure that unacceptable levels of damage as well as of wear and tear of the External Baggage Compartment (EBC) are timely detected and corrected. No means of compliance associated with the new requirement has been proposed.</p>

comment

1

comment by: LBA

LBA comment:

This SC obviously addresses various aspects of the whole paragraph 29.855 like accessibility, fire containment and fire detection. Therefore it is not understood why only 29.855 (d) is selectively referenced.

response

Noted - The design of the EBC is required to meet CS 29.855(a)(b)(c). However, the EBC is not equipped with a device that would ensure detection of fires or smoke by a crew member while at his station. The special condition is based on the principle that the EBC fire containment performance can be considered adequate only if the criticality of the fire load is limited through the control of the items that can be stored and transported in the EBC.

comment

2

comment by: LBA

LBA comment to "The external baggage compartment must be sealed to completely contain cargo fires without endangering the safety of the rotorcraft or its occupants ..."

comment:

It is unclear for which period of time fires should be contained. Until a landing and safe evacuation can be made? Or is it unlimited due to the fact that the fire may not be detected at all?

LBA comment to „The external baggage compartment must be sealed to completely contain cargo fires without endangering the safety of the rotorcraft or its occupants. Alternatively, the RFM must contain operating limitations that prohibit the carriage inside the external baggage compartment of :...“

comment:

The wording „alternatively“ in this sub-paragraph (a) implies an OR connection: (sealed compartment) OR (exclusion of dangerous goods)

But the subsequent sub-paragraphs (e) and (f) obviously assume that there is an AND connection.

- (e) assumes that there are baggage restrictions in place

- (f) assumes that compartment sealing features do exist

LBA comment section 2 (b) (iii):

Within the regulations of 29.865 emergency jettison of external load is a required feature as an ultimate means to save the rotorcraft. What is the rationale to exclude this means in the case of a burning external baggage compartment?

LBA comment section 2 (c):

If emitting flames are considered as a possible scenario it should be explicitly addressed that in this case the safety of the rotorcraft must not be endangered. Flame impingement of fuel tanks should be excluded by this requirement.

LBA comment section 2 (e):

This RFM procedure is certainly not reliable

response

Response to LBA comment on section 2.(a):

Noted - Inaccessible compartments must be sealed and designed to completely contain a compartment fire or to allow detection. Inaccessible compartments must have a detector unless the compartment can contain a fire. The EBC is not equipped with a detector, however the implementation of limitations applicable to the items that may be carried inside the EBC ensures sufficient mitigation to the risk that a fire having severity exceeding the containment capability of the EBC may develop during flight.

Response to LBA comment on section 2.(b)iii.:

Not accepted - The detachment of an item of mass such as the EBC should be prevented by design. At the same time addressing the cargo fire risk through a procedure that involves the jettisoning of the EBC is not considered in line with the intent of CS 29.855. The analogy with CS 29.865 is not considered appropriate by EASA. In fact, the allowance to jettison external cargo is explicitly allowed by CS 29.865 while CS 29.855 does not explicitly allow any jettisoning of cargo items or even of the entire cargo compartment.

Response to LBA comment on section 2.(c):

Not accepted - Section 2.(c) of the special condition addresses the scenario in which a fire event developing in the EBC is detected by the occupants of the rotorcraft. The intent of the requirement is to ensure that an emergency procedure is implemented to ensure landing as soon as possible. Protection of the rotorcraft structure or systems is addressed by the special condition in section 2.(b)i., which has been revised to include an explicit reference to direct flame impingement.

Response to LBA comment on section 2.(e):

Noted - EASA would like to point out that the special condition intends to introduce measures that ensure that the rotorcraft passengers are familiarized with the hazards associated to the transportation inside the EBC of items prohibited by the loading instructions required by the special condition in section 2.(d). Section 2.(e) of the special condition has been amended to limit the applicability of the complete requirement established therein to the contents of the EBC.

comment

4

comment by: AIRBUS HELICOPTERS

With regard to paragraph 2.(b) :

AH comment :

In absence of dangerous goods the fire resistance criteria from CS29.855(a)(1) may be used as boundary condition for compliance demonstration for (b)(i) and (b)(iii) (i.e. ISO 2685: 1100°C, 116 kW/m², 5 min)

AH justification :

The fire aggression for the demonstration according to (b)(i) and (b)(iii) is not defined with respect to temperature, heat flux and duration.

response

Not accepted - The special condition applies in lieu of CS 29.855(d). The requirements of CS 29.855, except for subparagraph (d), remain applicable, including the flammability requirements of CS 29.855(a)(1).

comment

5

comment by: AIRBUS HELICOPTERS

With regard to paragraph 2.(c) :

AH suggests modifying the sentence as follows :

AH proposed text:

The RFM must contain an emergency procedure addressing **both** scenarios in which flames or smoke emitting from the external baggage compartment **are and are not** visually detected by the occupants.

AH justification :

Avoiding that the fire not visually detected by the occupants expands and damages the helicopter structure or injures seriously the person trying to access the compartment on ground.

response

Partially accepted - Section 2.(c) of the special condition addresses the scenario in which a fire event developing in the EBC is detected by the occupants of the rotorcraft. The intent of the requirement is to ensure that an emergency procedure is implemented to ensure landing as soon as possible. Protection of the rotorcraft structure or systems is addressed by the special condition in section 2.(b)i., which has been revised to include an explicit reference to direct flame impingement.

comment

6

comment by: AIRBUS HELICOPTERS

With regard to paragraph 2.(d) :

AH suggests modifying the sentence as follows :

AH proposed text:

The RFM must contain the instructions necessary to ensure the safe loading **and unloading** of the external baggage compartment.

AH justification :

Checking after the unloading or before flying that the sealing of the door is not damaged, otherwise the fire would not be contained.

response

Accepted - Section 2.(d) of the special condition has been revised as proposed by the Commenter.

comment

8

comment by: TCCA , National Aircraft Certification

Page 3, Section 2(a):

I presume the intent was to use "Additionally" in lieu of "Alternatively". If we are really looking to an "or" condition, then in the format of the paragraph both options need to be at the same level.

If the word "alternatively" is the intent use, then we can have scenarios with a complete sealed compartment, but allowing to transport piercing items and dangerous goods (so the sealing could be easily loss...)

Suggested Change and Rationale:

Change "alternatively" with "additionally"

Page 3, Sect. 2(a)(ii)

Is there any airworthiness reason to not have mail in the compartment, or this requirement is based on other legal consideration? If later, is probably already covered by other rules, so no reason to be here.

Suggested Change and Rationale:

Remove mail from limitations

Page 3 OF 4 SECT 2a

The section 2a states "the external baggage compartment must be sealed..."

response

Response to TCCA comment on section 2.(a):

Accepted - Section 2.(a) of the special condition has been revised as proposed by the Commenter.

Response to TCCA comment on section 2.(a)(ii):

Not accepted - The special condition in question prohibits the transportation of mail in the EBC. The main concern associated to the transportation of mail is the fact that mail shipment

may include lithium cells/batteries and that the applicable ICAO Technical Instructions (ICAO Doc 9284), mandate the application of marking that highlights the presence of lithium cells/batteries only if specific conditions are met. In other words, there might be mail shipments that include lithium cells/batteries, but this might not be evident from any marking on the packaging. The special condition will not be modified.

Associated Means of Compliance

p. 4

comment

7

comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)*

MoC to SC-D29.855-01, page 4

Is it correct that, according to the Associated Means of Compliance, only non-radioactive medicinal articles (excluding aerosols) and toiletry articles (excluding aerosols) are allowed to be transported as dangerous goods in the EBC?

response

Noted - EASA confirms that the understanding of the Comment is correct.

comment

9

comment by: *TCCA , National Aircraft Certification*

Page 4, MoC, (a)

With the reference to comment 1, the transportation of dangerous goods seems to be allowed if the compartment is sealed.

Suggested Change and Rationale

Please clarify.

Page 4, MoC, (b)

SC-D29.855(d) requires a demonstration to be done that a fire developed in the EBC will not affect the rotorcraft or its occupants. A guidance what are the acceptable means for this demonstration would be useful.

Suggested Change and Rationale

Provide MoC for the demonstration requested

Page 4, MoC, (g)

The conspicuous location for placards is already covered by CS29.1541(b)(2). I suggest remaining only to specific instructions for EBC placards that are not included somewhere else. Besides, the word "should" in this MoC conflicts with "must" in the CS29.1541(b)(2) -advisory vs mandatory action.

Suggested Change and Rationale

Reword as: "Placards must be visible with doors open or closed and when EBC is fully loaded"

response

Noted - The comments on the Associated Means of Compliance are noted. However, no changes (other than the insertion of "and unloading" in section (d) and the insertion of section (h) "Reserved", for consistency with the revisions of section 2.(d) and section (h) of the special condition – see comments #6 and #10) will be introduced to the text of the MoC associated to the special condition. The changes that will be introduced to section 2.(a) of the special condition (see comment #8) will address the comment on the associated MoC. The demonstration of compliance with the requirement of section 2.(b) of the special condition will require the characterization of a worst case fire event that may develop inside the EBC, even if all the limitations to the type of cargo allowed in the EBC are met. Finally, the terminology used in the MoC (e.g. - "should" instead of "must") is in line with the guidelines applicable to regulatory material published by EASA.