

Proposed Equivalent Safety Finding on CS 25.857(b)(1) at Amendment 8
“Class B baggage compartment”

Applicable to Bombardier BD-700-2A12, BD-700-2A13

Introductory Note:

The hereby presented Equivalent Safety Finding has been classified as an important Equivalent Safety Finding and as such shall be subject to public consultation, in accordance with EASA Management Board decision 12/2007 dated 11 September 2007, Article 3 (2.) of which states:

"2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency."

Statement of Issue:

In CS-25 amendment 8, CS 25.857(b)(1) requires Class B compartments to be designed such that *'there is sufficient access in flight to enable a crewmember standing at any one access point and without stepping into the compartment, to extinguish a fire occurring in any part of the compartment using a hand fire extinguisher'*.

On the Global 7000 and 8000 (BD-700-2A12 & BD-700-2A13) aeroplane models, Bombardier has proposed a 200 ft³ Class B baggage compartment, for which the proposed extinguishing means is a built in Halon 1301 compartment flooding system.

Consequently, Bombardier submitted a request for an Equivalent Safety Finding against CS 25.857(b)(1) for the baggage compartment.

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Design proposal

The applicant proposes a 200 ft³ Class B baggage compartment which exceeds the 52" radius criterion contained in the related CS 25 guidance material (ref. AMC to CS 25.855 and 25.857).

The primary means to fight a baggage compartment fire is a built in Halon 1301 compartment flooding system. As such, the design will not meet the requirement that *"a crewmember standing at any one access point and without stepping into the compartment"* will be able to *"extinguish a fire occurring in any part of the compartment using a hand fire extinguisher"* (ref. CS25.857(b)(1)).

Safety equivalence demonstration

In order to demonstrate that the level of safety provided by this design is equivalent to that afforded by strict compliance to CS 25.857(b)(1), it must be substantiated that:

- (1) the built in agent discharge system design and capacity will achieve and maintain in the baggage compartment effective fire extinguishing conditions for a duration commensurate with the time needed for a crewmember to prepare for and achieve (2) below;

- (2) conditions (e.g. visibility, access) in the baggage compartment after discharge of the built-in system will be such that a crew member will be able to enter the compartment and ensure that a fire is extinguished. This can include, if required, additional agent application with a handheld extinguisher;
- (3) the means to discharge the built-in system can be actuated from either pilot station, and at the access point to the baggage compartment;
- (4) there is a means to prevent activation of the built-in system whenever the baggage compartment door is open;
- (5) the built-in system activation means at the access point to the baggage compartment is designed to minimise the risk of inadvertent operation by a passenger, and;
- (6) appropriate AFM procedures and associated training material are developed to cover all operational aspects of the baggage compartment built-in agent discharge system, by the crew, following detection of a fire in the baggage compartment.

In the context of (1) above, “effective fire extinguishing conditions” means there is no evidence of reignition for a period of thirty (30) minutes after the access door has been opened.