

Proposed Equivalent Safety Finding B-25 on CS 25.251(d) Vibration and Buffeting

Applicable to Bombardier CSeries CS100 (BD-500-1A10)

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:

CS 25.251(d) states that "there may be no perceptible buffeting condition in the cruise configuration in straight flight at any speed up to V_{MO}/M_{MO} , except that the stall warning buffeting is allowable".

A perceptible buffet has been identified in the CSeries CS100 becoming apparent at high calibrated airspeeds.

Equivalent Safety Finding on CS 25.251(b) – Vibration and buffeting -

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Applicant Proposal:

While perceptible, the intensity of the buffet is quite low, being similar in character to mild turbulence. While not compliant with CS 25.251(d), Bombardier Aerospace (BA) considers that the buffet associated with flight at higher airspeeds is distinct in comparison with other sources of buffet.

Applicant Safety Equivalency Demonstration:

The CSeries aircraft are equipped with structural and flight envelope protection functions, in addition to the visual indications, tactile cues (stick shaker and stick force softstops) and aural warnings to provide situational awareness to the flight crew.

These functions have been demonstrated to limit the aircraft to a safe flight envelope.

This buffet does not create an unsafe flight condition, in light of the nature of the buffet and the aircraft protection functions and the intent of CS 25.251(d) is met.