

**Equivalent Safety Finding related to CS29.807 (a) (4) at Amdt 3
"Emergency Exits"**

Applicable to Airbus Helicopters (AH) H160

Introductory note:

The hereby presented Equivalent Safety Finding (ESF) 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-29 Amendment 3 specifies airworthiness criteria for passenger emergency exits in terms of their design (including dimensions), number and location, arrangement, marking and accessibility. Regarding the dimensions criteria, the passenger emergency exits are categorized in Types I, II, III and IV. In particular, for Type IV passenger emergency exits CS 29.807 (a) (4) requires the following:

Type IV. This type must have a rectangular opening of not less than 0.48 m wide by 0.66 m (19 inches wide by 26 inches) high, with corner radii not greater than one third the width of the exit, in the side of the fuselage with a step up inside the rotorcraft of not more than 0.74 m (29 inches).

Openings with dimensions larger than those specified in this paragraph may be used, regardless of shape, if the base of the opening has a flat surface of not less than the specified width."

This requirement assumes that a single opening, meeting or exceeding the criteria specified above, would correspond to a single passenger emergency exit allowing evacuation of only one passenger at a time.

Design proposal:

In the frame of H160 Type Certification, AH intends to use a large jettisonable window installed in each passenger cabin sliding door as emergency exit for cabin passengers.

Each cabin sliding door window has dimensions greater than two minimum standard Type IV passenger emergency exits.

Each window provides outside view and emergency escape for two rows of 4 seats and is intended to allow, when jettisoned, independent evacuation of two passengers at a time (see Figure 1 below).

Each single window is equipped with two emergency release handles that can be operated from each of the two seat rows.



Fig. 1 Cabin sliding door window (white) location
(hypothetical Type IV exits (red hatched) shown for information)

Equivalent Safety Finding on CS29.807 (a) (4) at Amdt 3

AH has requested an ESF to the CS 29.807 (a) (4) to demonstrate that the single window of each cabin sliding door provides emergency evacuation capabilities at least equivalent, in terms of size and availability, to what would be provided by two Type IV passenger emergency exits installed side by side.

Conditions for the ESF:

In order to demonstrate a level of safety equivalent to CS29.807 (a) (4), AH should provide the following substantiations:

- Demonstration that the positioning of the single window in the sliding door is such that both affected seat rows are provided with a projected opening that is larger than the minimum standard Type IV exit. All foreseeable positions of the sliding door for emergency evacuation should be taken into account for this demonstration.
- Demonstration that the two means for window opening (including opening controls and mechanisms) are independent and that at least one is accessible and operable from each seat row. Additionally, operation of whatever of the two means should allow the window to be pushed out and provide emergency exit space opening for both seat rows.
- Demonstration, by an emergency evacuation testing, that the single window provides the possibility for two passengers to evacuate at the same time without interference.