

EASA Safety Information Bulletin

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Subject: Evacuation of Infants

Ref. Publications: US Department of Transport (DOT) Federal Aviation Administration (FAA) – Advisory Circular (AC) US DOT FAA -AC No <u>120-87B</u> Use of Child Restraint Systems on Aircraft dated 17 September 2010.

<u>DOT/FAA/AM-01/18</u>, November 2001: Caring for precious cargo, Part I: Emergency aircraft evacuations with infants onto inflatable escape slides.

<u>DOT/FAA/AM-05/2</u>, March 2005: Caring for precious cargo, Part II: Behavioural techniques for emergency aircraft evacuations with infants through the Type III over wing exit.

Applicability: All aircraft equipped with inflatable slides and/or hatch-type over wing exits.

Introduction: An accident that occurred in 2001 resulted in an evacuation involving a higher number of young aircraft occupants - infants and small children (the age of 'small children' involved in the accident is unknown). Due to absence of any guidance, some uncertainty arose between the passengers and crew during the evacuation as to the best method of evacuating small children or infants down the escape slides. This caused a short delay in the egress of passengers. The Air Accidents Investigation Branch (AAIB) of the United Kingdom (UK)issued a safety recommendation recommending that the UK Civil Aviation Authority, the Joint Aviation Authorities (JAA) and the Federal Aviation Administration (FAA) provide guidance as to the recommended best practice for the evacuation of infants and small children down escape slides with minimum delay.

Note: After the establishment of EASA in 2003, the safety recommendation was included in the Agency's Rulemaking Programme.

In 2001 and 2005, the FAA's Civil Aerospace Medical Institute (CAMI) carried out a study on evacuating an aircraft with infants:

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DOT/FAA/AM-01/18, November 2001 - the aim was to study emergency aircraft evacuations with infants onto inflatable escape slides through Type I floor level door. DOT/FAA/AM-05/2, March 2005 - the aim was to concentrate on the most favourable method of evacuating infants through a Type III over wing exit.

The FAA CAMI studies contain pictures of the studied subject.

Evacuation with children of a higher age than 2 years was not studied. Evacuation with infants and/or small children from upper deck of a multi-deck aircraft has not been studied yet.

The results of the two CAMI studies were published by U.S. Department of Transportation FAA in Advisory Circular AC No 120-87B, point 26.a.b. in September 2010.

Regulatory EASA prepared the Preliminary Impact Assessment (Pre-RIA RMT.0375 (OPS.081) Evacuation of infants) which was consulted with EASA's Advisory Group of National Authorities and Safety Standards Consultative Committee in March 2012. The consultation raised no opposition. The Pre-RIA concluded that a rulemaking task to amend the Implementing Rules and Acceptable Means of Compliance for air operations is not to be initiated, instead a SIB is to be issued. This conclusion was based on the fact that, while it is the aim to egress the aircraft as fast as possible, the parent/guardian's reaction in an emergency triggered by the psychological factor of boarding a narrow or a wide inflatable slide with or without side barriers at a particular door sill height - is critical to be considered as well. Forcing a parent/guardian to behave one mandated way, i.e. manoeuvre his/her child in one particular way if his/her parental instincts are different, and jump onto the escape device if he/she has concerns to jump whilst holding a child due to e.g. the size and design of the inflatable slide, may result in an e.g. hysteria attack and further complications that may affect the egress of those remaining on board. It is therefore not foreseen as viable to mandate the method of evacuation with infants and/or small children; the method of egress can only be recommended.

Therefore, the purpose of this SIB is to highlight to crew members, operators and national aviation authorities the recommended methods of evacuation with infants so that awareness of the travelling public can be raised as well.

Recommendations: The results of the referenced FAA CAMI studies suggest the following methods:

Boarding an escape device with infants:

When boarding an escape device (single or dual lane escape slide, slide raft, ramp slide) with infants, jumping on the escape device produces faster egress than sitting and sliding.

The carrying positions that provide the most protection for the

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infant would include:

Vertical position:

The carrier should cradle child's head and neck with one hand and should keep child's arms, legs and feet enfolded as much as possible in his/her arms.

Horizontal position:

The carrier should cradle child's head and neck in his/her arm and should keep child's arms, legs and feet enfolded as much as possible in his/her arms.

Evacuating through Type III over wing exit with infants:

Climbing through the Type III over wing exit while holding an infant produces a faster egress than passing the infant onto another passenger who has already exited.

An intention to pass an infant onto another person through the Type III over wing exit should be coordinated in advance, if possible, as there is no guarantee that someone would help.

Recommended carrying position:

Vertical holding of the infant is preferred . Horizontal carrying of larger infants is more likely to result in striking a part of the infant's body on the exit frame.

Evacuation methods with small children of age higher than 2 years would depend on the age and size of the child. The carrying method when egressing would be those most comfortable for the parent and the child, at the same time providing adequate protection for the child and ensuring a fast egress from the aeroplane.

EASA recommends that operators review their Operations Manual and include the above information in crew trainings, pre-evacuation safety briefings, passenger safety cards and/or passenger education material.

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