

# DESIGN FOR CABIN SAFETY

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## Abstract

The fatal air crash rate has begun to decline significantly since the 1970s; this was not accompanied by an equivalent reduction in the fatality rate of passengers aboard these aircraft. The trend for air transport is continuing growing that demands aircraft with increased seating capacity for passengers; demands by executive airplanes with cabins that meet the peculiarities of this aviation are also being projected. Consequently, the investment in the Cabin Safety study is of great interest for both the aerospace industry and the public interest. Cabin safety can interfere directly in the level of survivability inside the aircraft after a survivable aeronautical accident. This article presents opportunities for safety improvements in aircraft interior design process. It reviews cabin safety airworthiness requirements, the aspects of ergonomics for safety and the origin of crashworthiness research. It discusses the affordance idea and explains why this concept ought to be considered as safety factor. The contribution of this work lies in the formulation, construction and development of a method labeled ***Design for Cabin Safety*** to evaluate cabin safety adherence in interior new configuration or interior project change. The proposed method aims to tackle one of the challenges of the Cabin Safety technology, namely to lowering the subjectivity of its requirements, translating them into the design language. Ultimately the method was tested in real aircraft interior configuration development with encouraging results. This method and its application serve as reference for the aerospace industry in the development of new cabin interior configuration.

**Keywords:** Cabin Safety. Crashworthiness. Design. Affordance. Human Factors. Ergonomics.