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16. Abstract

This report presents a peer review of a research project conducted by the Federal Aviation Administration's (FAA's) Civil Aerospace Medical Institute (CAMI) to assess whether airplane evacuation times can be affected by variations in passenger seating space, and particularly the dimensions of seat width and seat pitch. As delineated in the CAMI study, seat width is the distance between the inner edges of the arm rests, while seat pitch is the distance between two seats, one in front of the other, measured from the same point on each seat. CAMI requested this review because of FAA's interest in knowing whether the project's results may be informative to pending decisions about whether to regulate the width and pitch of passenger seats. Of concern is that constrained seat space may interfere with cabin evacuations during an emergency, especially because the average body size (e.g., girth, weight) of Americans has been increasing. While FAA has the authority to regulate seat dimensions and configuration for any reason having a safety basis, such as to protect passengers from hazards in flight, this review focuses solely on the CAMI research project and FAA's interest in understanding whether constrained seat space may impede evacuations for the purpose of informing its regulatory determinations. In this regard, the findings from the review suggest that CAMI's research project does not provide the information needed for the proposed purpose. The project's fundamental shortcoming is that it does not directly assess how seat width and pitch interact with passenger body size variables to affect evacuation performance, and especially for plausible scenarios in which the number and concentration of people with large body sizes on a flight may differ from the pattern for the flying public generally.

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