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Presenter:

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Topic: Evacuation and Post-Crash Survival: Interior Configuration

Title: Effects of Airplane Cabin Interiors on Egress I: Assessment of Anthropometrics, Seat Pitch, and Seat Width on Egress

Abstract

Within the Federal Aviation Administration (FAA) Reauthorization Act of 2018, Pub. L. No. 115-254 § 577, Congress required that "...the Administrator of the Federal Aviation Administration shall issue regulations that establish minimum dimensions for passenger seats on aircraft operated by air carriers in interstate air transportation or intrastate air transportation, including minimums for seat pitch, width, and length, and that are necessary for the safety of passengers." This research project was developed to provide information to rule-makers within the FAA to meet this requirement.

A total of 775 participants were recruited to assist with meeting two research objectives: first, to determine what percentage of the American population, based on anthropometric measurements, would be unable to sit in transport airplane passenger seats at the currently narrowest width and even narrower seat pitch. The second objective was to determine the effect of seat pitch and seat width on individual egress time. The study included 718 participants assigned to 12 groups who participated in up to four evacuations from the FAA's Flexible Aircraft Cabin Simulator (FlexSim), with various seat pitch and width combinations.

Based on this study's results, currently flying seat pitches using seats of similar size or smaller than those used in this project can accommodate and not impede egress for 99% of the American population. This project also concluded that, similar to previous evacuation research, as long as ergonomic minimums are maintained, the transport airplane's interior configuration, including seat pitch and width, has not been shown to influence evacuations.