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Human Factors Associated with the Certification of Airplane Passenger Seats: Life Vest Retrieval

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Under-seat life vest retrieval in the confines of a narrow seat-pitch economy class cabin was studied in a research project at the FAA Civil Aeromedical Institute. FAA policies dictate that for aircraft with personal floatation devices installed beneath the seat, the device (life vest) must be easily retrievable. Compliance with this requirement is subjective on the part of the certifying authority, and has been notably inconsistent in recent years. This CAMI research was designed to analyze human performance factors such as time for vest retrieval, physical interference with the cabin environment, and physical capability to reach the vest while seated/belted. Four different life vest installation methods were included in this protocol, and 137 human subject tests were conducted. The time to remove a life vest and subjective assessments of each subject's attempt to remove a vest were included in the analysis of the tests. The early analysis of the data indicates there are physical installation features that significantly affect the ease and-or capability for a typical passenger to retrieve the under-seat life vest.