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Abstract

Purpose. Twenty-nine survivable aircraft accidents between 1970 and 1995 required the emergency evacuation of 67 infants. Thirty-four percent of the infants received minor to fatal injuries. With the exception of full-scale Type Certifications in which infant dolls are included but not studied, simulated emergency evacuations and evacuation research rarely include infants and young children. The purpose of this study was to determine the most favorable protocol for the evacuation of infants via an inflatable emergency evacuation slide. Method. Simulated emergency evacuations were conducted from the Civil Aerospace Medical Institute Aircraft Evacuation Facility, using a Type I exit fitted with a Boeing 737 evacuation slide. Six groups of 32 adult evacuees participated in six evacuation trials. Eight evacuees in each group carried one of eight dummies representative of infants ranging from two to 24 months old. On the first and last trials, no instructions were given as to how the dummies should be carried or how to board the slide. The intervening trials included instructions to carry the dummy horizontally or vertically and to jump onto the slide or sit on the slide to board. Results were analyzed with respect to speed of egress relative to the effects of the carrying and boarding positions. Subject responses to a questionnaire regarding comfort and safety were also analyzed. Results. For speed of egress, MANOVA revealed a main effect for slide boarding ($p < .001$), with no effect for carrying position and no interaction effects. Subjects reported that jumping onto the slide was easier than sitting to board the slide. Conclusions. Results confirmed the expectation that jumping onto the evacuation slide would produce faster egress rates than sitting and sliding while carrying an infant. Results also suggested that appropriate carrying and boarding positions

would be those most comfortable for the *parent* and those providing support for the child's head and neck.