

ABSTRACT

Evacuation studies: Design, analysis, and selected results.

The study of simulated emergency evacuations of aircraft cabins requires more than just the measurement of the impact of various conditions on evacuation times. The proper design of experiments and analysis of data can provide critical insight into evacuation behavior. That insight can be useful in predicting behavior in actual emergency evacuations and in ways of improving the safety and speed of real and simulated evacuations.

The presentation will discuss: "What needs to be studied?," "What needs to be measured and how?," "How to collect the data?," "How to analyze the data?," and "What limitations impact the analysis and interpretation?" The results of studies on such factors as: lighting, "seat pitch", exit type, baggage litter, emergency exit access width and configuration, physical and psychological characteristics of the subjects and cabin crew, etc., will be discussed.

The study designs, analysis, and results reported in this paper were a collaborative effort of the Aircraft Certification Branch of Transport Canada Civil Aviation (Canada), the Human Factors Group of Cranfield University (UK), and NSL Associates (USA).