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Topic:

Crash Dynamics – Computer Modeling

Title:

Certification by Analysis of Aircraft Seats

Abstract:

Aircraft seating systems physical testing is increasingly being replaced by numerical simulation models because it provides a more rapid and less expensive way to evaluate design concepts. The principal goal of these modeling efforts is to use numerical models to accurately predict the results of physical tests. Per Advisory Circular 20-146 an accurate numerical model could potentially be used to evaluate the seating system in lieu of physical testing, saving both development time and cost. A means of establishing confidence in this predictive ability is needed. Towards that end, NIAR has been conducting a research program to provide the baseline test data required to define specifications for numerical occupant models of the Hybrid II and FAA Hybrid III anthropomorphic test dummies (ATD) and procedures for developing multibody and finite element seat models suitable for aviation impact test simulations.