

EVALUATION OF THREE METHODS FOR PREDICTING NUCLEAR BLAST AIRLOADS ON LIFTING SURFACES FOR THE ASTROS CODE

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Three methods for predicting nuclear blast-induced airloads on lifting surfaces are being put into the Air Force/DNA Automated Structural Optimization System (ASTROS) computer code for aircraft blast response calculation. As part of the verification procedure for those aerodynamic methods, predictions using each method are being correlated with sled test data.

Interaction of blast wave with a rigid 65-deg sweepback wing was measured on a rocket propelled sled Mach 0.76. The data obtained were for blast wave overpressures varying between 1 and 4 psi. The analytic aerodynamic procedures used for this correlation are the doublet-lattice method, strip method and a nonlinear separating-flow model. The ability of each method to predict blast induced airloads on a lifting surface is discussed.