COMPARISON OF TEST RESULTS FOR A WING SUBJECTED TO ROCKET-SLED BLAST AND TO SHOCK-TUBE ENVIRONMENT

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The dynamic response of an aircraft wing in a blast environment has been evaluated by the DNA using 2 simulated blast techniques. The first, using a rocket sled and nearby timed high explosive charges, collected data on an airfoil. The data set has served as the basis for updating response computer codes and for check out of modules in a new USAF sponsored FE design code. Unfortunately, the rocket sled test method has proven to be expensive. An alternate method of gust simulation is the shock tube, a technique theoretically capable of generating similar gust velocities of interest. Shock tube tests of the same wing used on the rocket sled were conducted in a shock tube as a proof of concept. This paper and presentation will summarize the test methods, test setup and data. The 2 methods will be compared.