SIMULATION OF NUCLEAR BLAST WAVE INTERACTION WITH A HIGH SPEED AIRCRAFT

GARRISON,D.W.;RUETENIK,J.R.;SMILEY,R.F.

Blast-induced airloads on a 65-degree swept wing at Mach 0.8 are reported. In the tests a highly-instrumented wing is mounted on a rock-propelled sled of the test track at Holloman Air Force Base, New Mexico. The blast waves are produced by TNT charges of 1,000 and 10,000 pounds detonated in
a blast area adjacent to the track. The blast intercept angles and shock strengths are varied. Transient pressure loadings on the model are meas-ured using miniature pressure transducers and telemetry to a ground station.

The results of tests to measure the interaction of a blast wave with an engine inlet of a supersonic-airplane type are reported. In the tests a 0.1 scale inlet, mounted in the 16-ft transonic wind tunnel of the Arnold
Engineering Development Center, Tennessee, is subjected to shock waves fires from shock tubes in the tunnel wall. The tunnel Mach number is high subsonic. The effect of the shock waves on the flow (distortion) at the engine face location in the inlet is examined as a function of the shock parameters, inlet flow rate and tunnel Mach number.