

Abstract Submitted  
for the SHOCK17 Meeting of  
The American Physical Society

**Comparison of Slab and Cylinder Expansion Test Geometries for PBX 9501** SCOTT JACKSON, ERIC ANDERSON, TARIQ ASLAM, VON WHITLEY, Los Alamos National Laboratory — The slab expansion test or “sandwich test” is the two-dimensional analog of the axisymmetric cylinder expansion test. The test consists of a high-aspect-ratio rectangular cuboid of high explosive with the two large sides confined by a thin metal confiner. Analysis of the confiner motion after the passage of the detonation yields the detonation product isentrope, which is a specialized form of the product equation of state. The slab expansion geometry inherently exhibits a lower product expansion rate and lower plastic work on the confiner than the cylinder expansion geometry. The slab geometry does, however, have a shorter test time. We review recent slab and cylinder expansion data with PBX 9501, the associated equation of state analysis, and the advantages of each geometry for different applications.

Scott Jackson  
Los Alamos National Lab

Date submitted: 24 Feb 2017

Electronic form version 1.4