

Abstract Submitted
for the SHOCK17 Meeting of
The American Physical Society

A Volumetric Approach to Shock Initiation of Hexanitrostilbene and Pentaerythritol Tetranitrate MIKE BOWDEN, AWE Plc — A range of analytic shock initiation criteria have been developed, such as those proposed by Walker & Wasley and James. Such criteria allow rapid assessment of whether a particular shock stimulus will result in detonation of explosives. These criteria have been developed for a range of impactors, such as flyers, rods, and spheres, using a single dimension of the impactor, such as diameter. Initiation studies of hexanitrostilbene and pentaerythritol tetranitrate by thin, curved flyers has indicated the need for a three-dimensional shock initiation criteria. A shock initiation criteria, based on the concept of a critical shock volume as a function of shock pressure, has been developed, and shown to describe this data more completely than existing criteria.

Mike Bowden
AWE Plc

Date submitted: 20 Feb 2017

Electronic form version 1.4