

Abstract Submitted
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Initiation of Polymer Bonded Explosive (PBXN-110) by Combined Shock and Shear Loading JENNIFER JORDAN, Air Force Research Laboratory, Munitions Directorate, Eglin AFB, FL 32542, ROBERT DORGAN, Jacobs Technology, TEAS Group, Eglin AFB, FL 32542, MICHAEL NIXON, Air Force Research Laboratory, Munitions Directorate, Eglin AFB, FL 32542, RICHARD DICK, Shocks Unlimited, Albuquerque, NM — Combined shock and shear loading of explosives has been shown to result in detonation of explosives at input pressures less than those required with a nearly planar shock (Cart, APS-SCCM 2003). In this study, the effect of combined shock and shear loading on PBXN-110 is investigated. The explosive sample is loaded by a TNT/Octol plane wave lens in contact with a layer of PMMA followed by a cylindrical wave shaper that has one side angled at 45 degrees. The experiment is repeated for different thicknesses of the PMMA layer in order to vary the input pressure. In addition, the experiment is modeled using the Lagrangian finite element hydrocode EPIC, and the results of the experiments are compared with the numerical simulations.

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