

Abstract Submitted
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Experimental and Numerical Investigation of a Pyrotechnic Mixture Under a Cylindrically Converging Shock Condition CHARLES M. JENKINS, YASUYUKI HORIE, C. MICHAEL LINDSAY, DAVID E. LAMBERT, ERIC J. WELLE, GEORGE C. BUTLER, USAF- Wright Labs — This research builds on Forbes et al. (1997) study of inducing a rapid solid state reaction in a highly porous core using a converging cylindrical shock driven by a high explosive in the annular space. Using high speed photography and photon doppler velocimetry (PDV), the expansion velocity of the cylinder outer wall provides a comparison to the baseline high explosive core and the pyrotechnic cores. The CTH hydrocode model analysis of the case expansion and fluid velocities indicated that the outer case expansion velocity differs according to the formulation in the core and that the core materials are responding similarly to the baseline high explosive core.

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