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Determination of Explosive Blast Loading Equivalencies with an Explosively Driven Shock Tube SCOTT JACKSON, LARRY HILL, JOHN MORRIS, Los Alamos National Laboratory — Recently there has been significant interest in evaluating the potential of many different non-ideal energetic materials to cause blast damage. We present a method intended to quantitatively compare the blast loading generated by different energetic materials through use of an explosively driven shock tube. The test explosive is placed at the closed breech end of the tube and initiated with a booster charge. The resulting shock waves are then contained and focused by the tube walls to form a quasi-one-dimensional blast wave. Pressure transducers along the tube wall measure the blast overpressure versus distance from the source and allow the use of the one-dimensional blast scaling relationship to determine the energy deposited into the blast wave per unit mass of test explosive. These values are then compared for different explosives of interest and compared to other methods of equivalency determination.

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