Abstract Submitted
for the SHOCK09 Meeting of
The American Physical Society

Investigation of aluminum 6061-T6 strength properties to 160 GPa WILLIAM REINHART, SCOTT ALEXANDER, Sandia National Laboratories, JAMES ASAY[1], Ktech Corporation, LALIT CHHABILDAS, AFRL, Eglin Air Force Base — Shock compression experiments were performed on aluminum 6061-T6 up to 160 GPa to probe aluminum strength through the melt regime. A careful set of experiments, using established two and three stage flyer plate launch techniques were conducted using symmetric impact loading conditions to compress the aluminum through the solid to liquid phase boundary. Velocity interferometry provides the fine structure almost as an in-situ particle velocity wave profile at the aluminum/lithium-fluoride window interface. Results will be detailed in terms of wave speeds in the shocked state for estimates of strength of the material. Results of these experiments will be discussed in detail. Sandia is a multi-program laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

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Date submitted: 23 Feb 2009 Electronic form version 1.4