Abstract Submitted for the SHOCK11 Meeting of The American Physical Society

Spallation Response of Ti-6Al-4V: Rear Surface Velocimetry and X-ray Tomography SAMUEL A. MCDONALD, Materials Science Centre, School of Materials, University of Manchester, Grosvenor Street, Manchester, M1 7HS, UK, MATTHEW COTTON, NEIL K. BOURNE, JEREMY C.F. MILLETT, AWE, Aldermaston, Reading, Berkshire, RG7 4PR, UK, PHILIP J. WITHERS, Materials Science Centre, School of Materials, University of Manchester, Grosvenor Street, Manchester, M1 7HS, UK — The investigation of the dynamic tensile or spallation response of materials is generally monitored by the measurement of reload signals during rear surface velocity signals, or post-mortem by metallography of sectioned target assemblies. This latter can only reveal features in two-dimensions, although repeated sectioning can generate a three-dimensional representation of the spalled region. However, X-ray microtomography can generate three-dimensional images without the need for sectioning. In this investigation, we combine rear surface Het-V measurements on Ti-6Al-4V with X-ray microtomography of recovered targets to determine tensile failure mechanisms during dynamic loading.

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Date submitted: 17 Feb 2011

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