

Abstract Submitted  
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**Variation of Shear Strength in Shock Loaded Niobium** ANDREW WORKMAN, JEREMY MILLETT, STEWART STIRK, NEIL BOURNE, GLENN WHITEMAN, NIGEL PARK, AWE, Aldermaston — Previous work on the shock response of body centred cubic (bcc) metals, notably tantalum and tungsten has shown that whilst the shear strength increases with applied shock stress, it decreases with duration behind the shock front. In tantalum, post shock microstructural examination has shown only a minor increase in dislocation density occurs, in keeping with the high Peierl's stress in these materials that restrict dislocation generation. We now extend this work to another bcc metal, niobium. Shear strengths are monitored through the use of manganin stress gauges mounted such that they are sensitive to the lateral component of stress, in combination with knowledge of the shock induced impact stress. British Crown Copyright MOD/2009

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