

Abstract Submitted
for the SHOCK05 Meeting of
The American Physical Society

Material Strength Models for Vanadium STEPHEN POLLAINE, THOMAS LORENZ, BRUCE REMINGTON, JOHN EDWARDS, ED ALLEY, DAVE BAILEY, Lawrence Livermore National Lab — We have preliminary results of measurements of vanadium strength at 600 kb and 1 Mb, at strain rates between 10^7 and 10^8 /s. The results are inconsistent with the Steinberg-Guinan [1] model, which is independent of strain rate, but can be made consistent with other models, such as PTW [2]. We show a variety of different strength models and compare them to the data. [1] D.J.Steinberg, S.G.Cochran, and M.W.Buinan, J. Appl. Phys. **51**, 1498 (1980). [2] D.L. Preston, D.L.Tonks, and D.C.wallace, J. Appl. Phys. **93**, 211 (2003). This work was performed under the auspices of the U.S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under contract No. W-7405-Eng-48.

Stephen Pollaine
Lawrence Livermore National Lab

Date submitted: 07 Apr 2005

Electronic form version 1.4