## Abstract Submitted for the SHOCK07 Meeting of The American Physical Society

Low-Power Heterodyne Velocimetry of shocked metal surfaces ANDREW CRITCHLEY, ED PRICE, MARTIN PHILPOTT, NATHAN ROUT-LEY, Hydrodynamics Division, DIAGNOSTICS DEVELOPMENT TEAM — A low-power variant of a Heterodyne Velocimeter (HetV) based on a LLNL design¹ has been constructed to study motion of shocked metal systems. The system benefits from utilising a class 1 laser system enabling its safe usage and easy transfer between facilities. A number of experimental systems have been studied to establish the limits of the low power system including shocked metal targets on a large bore gas gun and H.E. driven systems. It is shown here how high quality absolute velocity measurements may be obtained from a variety of surface conditions without recourse to higher power lasers. Advanced analytical techniques have also been developed which complement the simple set-up and use of the HetV system which are presented here.

<sup>1</sup>O.T. Strand *et al.*, *Velocimetry using heterodyne techniques*, 26<sup>th</sup> Intl. Congress on High Speed Photography and Photonics, Sept. 19<sup>th</sup>–24<sup>th</sup> 2004.

Andrew Critchley Hydrodynamics Division

Date submitted: 23 Feb 2007 Electronic form version 1.4