

Abstract Submitted
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A Comparison of Multiple Techniques for Determining the Release Behaviour of a Simple FCC Metal MICHAEL LOWE, AWE, Aldermaston, DAVID CHAPMAN, Institute of Shock Physics, Imperial College London, STEVE ROTHMAN, CHRIS ROBINSON, AWE, Aldermaston — A shock compression pulse normally consists of a discontinuous rise in stress or pressure followed by a sustained period, if loaded using a technique such as plate impact, and terminated with a release back to ambient conditions over a finite time. Although historically a great body of work has been undertaken on the measurement and characterisation of the rise profile and plateau of many metals, minerals and other materials, the subsequent release phenomenon has tended not to be so vigorously investigated. This release behaviour is a compound effect, normally dependent upon the initial shock loading conditions and the distance within the subject material that the subsequent release effect has travelled. We discuss recent work undertaken on the development and testing of methodologies for investigating the release behaviour. These methods were employed to determine the release behaviour of a commonly available commercial C101 copper, the choice of which was made to minimise experimental complications due to any phase changes, microstructural effects or inherent material strength.

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