

Abstract Submitted
for the SHOCK09 Meeting of
The American Physical Society

The response of a carbon-fibre phenolic resin composite to one-dimensional shock loading RICHARD BURRELL, NICK BARNES, PETER KEIGHTLEY, JEREMY MILLETT, NEIL BOURNE, AWE, MIKE LYNCH, KENDAL OGILVIE, SCOTT DOANE, ITT — The Hugoniot of a carbon-fibre-phenolic composite has been measured via plate impact, using manganin stress gauges as the main diagnostic. The shock velocity has a linear response with particle velocity, but the velocity itself is higher than in similar aerospace composites. Consequently, the Hugoniot in terms of shock stress is also higher than in conventional carbon composites. Differences between the measured stress and calculated hydrodynamic pressure suggest that the shear strength of this material also increases with pressure.

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Date submitted: 19 Feb 2009

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