

Abstract Submitted  
for the SHOCK11 Meeting of  
The American Physical Society

**The Dynamic Behaviour and Shock Recovery of a Porcine Skeletal Muscle Tissue** JAMES WILGEROTH, PAUL HAZELL, GARETH APPLEBY-THOMAS, Cranfield University — Modern-day ballistic armours provide a high degree of protection to the individual. However, the effects of non-penetrating projectiles, blast, and high-energy blunt impact events may still cause severe tissue trauma/remote injury. The energies corresponding to such events allow for the formation and transmission of shock waves within body tissues. Consequently, the nature of trauma inflicted upon such soft tissues is likely to be intimately linked to their interaction with the shock waves that propagate through them. Notably, relatively little is known about the effect of shock upon the structure of biological materials, such as skeletal muscle tissue. In this study plate-impact experiments have been used to interrogate the dynamic response of a porcine skeletal muscle tissue under one-dimensional shock loading conditions. Additionally, development of a soft-capture system that has allowed recovery of shocked skeletal muscle tissue specimens is discussed and comparison made between experimental diagnostics and hydrocode simulations of the experiment.

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Date submitted: 24 Jan 2011

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