

Abstract Submitted  
for the SHOCK09 Meeting of  
The American Physical Society

**Damage Evolution in Ballistic Impact of Glass Plates<sup>1</sup>** STEPHAN BLESS, ROD RUSSELL, DON BERRY, SCOTT LEVINSON, The University of Texas at Austin, Institute for Advanced Technology — High-speed photographs were obtained from impact of .50-caliber fragment-simulating projectiles at 1100 m/s onto a 12 mm glass plate bonded with polyurethane to 28 mm of polycarbonate. Impact damage was compared to similar impacts on multi-glass-layer targets. Transitions from bundled radial cracks to fan cracks to radial cracks to dicing cracks occurred in both targets, but in the single-glass-layer target, a layer of glass remained adhered to the substrate. Initial damage spread was faster than the maximum crack speed, but fan and radial cracks grew at the crack speed in glass. The damage development is similar to that seen in edge-on-impact experiments reported over the past couple of years, and it is suggested that those experiments should be reinterpreted as showing impact-plate damage and not penetration phenomena.

<sup>1</sup>The research reported in this document was performed in connection with award number N00014-06-1-0475 from the US Navy, Office of Naval Research (ONR).

Sandra Spicher  
The University of Texas at Austin, Institute for Advanced Technology

Date submitted: 25 Feb 2009

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