

Abstract Submitted  
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**Effects of manufacturing processes on the dynamic properties of gold.**<sup>1</sup> WILLIAM ANDERSON, ANIRBAN MANDAL, DANIEL HOOKS, BRIAN JENSEN, Los Alamos National Laboratory — As part of a study into the effects of manufacturing processes, a series of experiments is being conducted on the dynamic properties of gold. In the present experiments, samples were prepared by two different techniques—casting and rolling (wrought) and continuous electrodeposition (ED). The wrought samples have typical microstructure, with somewhat elongated grains that appear similar in both in-plane- and transverse-view micrographs. The ED samples, on the other hand, have highly elongated grains oriented perpendicular to the plane of the samples, extending nearly through the thickness of the samples, with very different morphologies apparent in different micrographic orientations. Experiments were designed to subject both types of sample to identical impact conditions, with standard time-resolved Doppler velocimetry techniques used to obtain shock transit times and free-surface velocity histories, yielding data on the shock Hugoniot and spall stresses of the materials. The results will be presented and implications discussed.

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William Anderson  
Los Alamos National Laboratory

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