

Abstract Submitted
for the SHOCK07 Meeting of
The American Physical Society

Instability of an Interface Between Steel layers Acted Upon by an Oblique Shock Wave OLEG DRENNOV, RFNC-VNIIEF — The results of experiments in which development of instability was observed on the interface between two identical metals in tight contact with passage of an oblique shock wave through it are presented. The loading scheme is shown in figure 1. The photograph of microsection of the contact boundary after shock-wave loading is shown in figure 2.

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The calculations showed that perturbations develop only in the presence of a technological microgap of several micrometers between the metal layers. Unloading of the material behind the oblique shock front into the gap gives rise to considerable short-term velocity gradient ($t \leq 0.2 \mu s$; $\Delta U \geq 3 \mu mm/\mu s$). Simultaneously, near the interface behind the wave front there is a short-term loss of strength of the material due to thermal softening and the heterogeneous nature of the deformation.

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Date submitted: 13 Feb 2007

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