Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Investigations of PBX 9502 relight phenomena using a modified gap test ELIZABETH FRANCOIS, CHRISTINA SCOVEL, DANA DATTELBAUM, Los Alamos National Lab — We present a series of experimental results on PBX 9502 relight gap tests where epoxy gaps of varying thickness and material were placed within between equal lengths of PBX 9502. Piezo pins were used to record velocity before and after the gap. Relight location was measured and subsequent velocity calculated. These results were used to validate and improve models, and support gas-gun shock initiation experiments. The design for these tests utilized a modified gap test where the donor and the acceptor explosives are the same, and separated by an epoxy gap of varying thickness. The epoxy used was comprised of Epon-828 and Jeffamine T-403. The explosive studied was PBX 9502. The goal of the experiment was to initially reach steady state detonation behavior, and then retard it with the gap, and measure the velocity and re-initiation behavior. The results were then compared to existing models. Other gap materials were studied as well, and the approach and results of all materials will be discussed.

Elizabeth Francois
Los Alamos National Lab

Date submitted: 18 Nov 2013 Electronic form version 1.4