Abstract Submitted
for the SHOCK17 Meeting of
The American Physical Society

Shock initiation of the TATB-based explosive PBX 9502 heated to 130 degrees C R. L. GUSTAVSEN, B. D. BARTRAM, L. L. GIBSON, A. H. PACHECO, J. D. JONES, A. B. GOODBODY, Los Alamos National Laboratory — We present gas-gun driven plate-impact shock initiation experiments on the explosive PBX 9502 (95 weight % triaminotrinitrobenzene, 5 weight % Kel-F 800 binder) heated to 130 +/- 2 degrees C. PBX 9502 samples were heated using resistive elements, temperatures were monitored using embedded and surface mounted type-E thermocouples, and the shock to detonation transition was measured using embedded electromagnetic particle velocity gauges. Results indicate that shock sensitivity increases regularly as the temperature increases. For a fixed initial pressure, the time and distance to onset of detonation are shorter for the heated explosive than for the explosive initially at 23 degrees C. For PBX 9502 heated to 130 degrees C, the "Pop-plot" or distance to detonation, x_D, vs. impact pressure, P, is $\log_{10}(x_D) = 2.82 - 2.19 \log_{10}(P)$.

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Date submitted: 23 Feb 2017 Electronic form version 1.4