Abstract Submitted
for the SHOCK07 Meeting of
The American Physical Society

Observations of shock-induced partial reactions in high explosive

SHIRO KUBOTA, YUJI OGATA, YUJI WADA, TEI SABURI, National Institute of Advanced Industrial Science and Technology, KUNIHITO NAGAYAMA, Department of Aeronautics and Astronautics, Faculty of Engineering, Kyushu University

— The high speed photography, pressure measurements and numerical simulation of gap test of the high explosive have been carried out. The height of donor is 50 mm and acceptor is 40 mm with 26 mm inner diameter. When the gap length is 23 mm or large, the sympathetic detonation was not confirmed. Although the detonation does not occur, the gas expansion from the acceptor appears as the results of remarkable decomposition if the gap length approaches 23 mm. Those phenomena are very important on the point of view of the safety engineering. Finally, the parameters of initiation model which could reproduce the behaviors of high explosive around the critical condition were constructed.

Shiro Kubota
National Institute of Advanced Industrial Science and Technology

Date submitted: 24 Feb 2007 Electronic form version 1.4