

Abstract Submitted
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Gap Test Calibrations and Their Scaling HAROLD SANDUSKY,
NSWC Indian Head Division — Common tests for measuring the threshold for shock initiation are the NOL large scale gap test (LSGT) with a 50.8-mm diameter donor/gap and the expanded large scale gap test (ELSGT) with a 95.3-mm diameter donor/gap. Despite the same specifications for the explosive donor and polymethyl methacrylate (PMMA) gap in both tests, calibration of shock pressure in the gap versus distance from the donor scales by a factor of 1.75, not the 1.875 difference in their sizes. Recently reported model calculations suggest that the scaling discrepancy results from the viscoelastic properties of PMMA in combination with different methods for obtaining shock pressure. This is supported by the consistent scaling of these donors when calibrated in water-filled aquariums. Calibrations with water gaps will be provided and compared with PMMA gaps. Scaling for other donor systems will also be provided. Shock initiation data with water gaps will be reviewed.

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