

LD-102, the second implosion physics experiment in the LD series, was conducted on schedule, 2 weeks after LD-101. LD-102 had two objectives: (1) to demonstrate that Atlas can conduct physics experiments at 2-week intervals and (2) to continue the investigation of instability physics in imploding liner systems, specifically by changing the drive conditions to explore perturbation growth.

The diagnostic suite for LD-102 was similar to that for LD-101. All critical diagnostics delivered good data. LD-102 explored liner performance at lower current delivery (more-gentle drive) than LD-101. Under reduced drive, enhanced instability might (by some models) have been expected. However, radiographs showed no evidence of increased instability at the lower drive achieved in LD-102 in agreement with previous Atlas experiments at LANL.

Throughout the LD series, shot operations became smoother and more efficient, indicating that the Atlas system was successfully relocated and that the new BN operating team was rapidly gaining experience with the pulsed-power operating environ-

ment. Preparation for the next experiments (Spall) required some minor changes in machine configuration, installation of the spall target assembly, and some additional diagnostics, which made the prompt execution of the first Spall test another notable accomplishment.

Two material damage experiments, Spall 101 and Spall 102, were conducted on August 25 and September 8, additionally demonstrating that the Los Alamos-BN team can set up and conduct implosion liner experiments on a 2-week schedule.

The Spall test series is designed to provide detailed information about the formation and evolution of damage in a well-characterized reference material (aluminum) using the converging geometry characteristic of the operation of a nuclear weapon. Spall experiments on Atlas at NTS continue the experimental series begun in 2002 when Atlas was located at Los Alamos. After benchmarking the results of the NTS Spall experiments against data collected using the same techniques and parameters in Los Alamos, the series will explore recollection and

