

Section 1

LASER SYSTEM REPORT

1.A GDL Facility Report

The glass development laser (GDL) facility operations during this quarter included laser-target interaction experiments, tests of several schemes to improve the OMEGA beam uniformity, and alignment and installation activity for the GDL/OMEGA integration task, which will enable GDL to provide an x-ray backlighting source for OMEGA experiments.

A summary of GDL activities during this quarter follows:

Beamline Alignment/Test Shots	149
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1.B OMEGA Facility Report

During the second quarter of FY86, the OMEGA laser provided shots for a number of experimental programs and for a series of tests to determine the parameters controlling the on-target irradiation uniformity.

During this quarter the laser operated primarily in the intermediate pulse-width regime of 400 to 450 ps. Peak power generated equaled 4 TW. The experimental programs included (a) two series of National Laser Users Facility (NLUF) experiments; (b) target irradiation uniformity tests using x-ray signature targets and thin-walled DT-filled

targets; (c) x-ray streak-camera calibration and activation experiments; (d) x-ray line self-absorption spectroscopy tests; and (e) exploratory thick-walled glass target experiments.

Uniformity tests included (a) cw argon-ion laser beam tests of thermally induced beam distortion; (b) characterization of defects in crystals and other optics; and (c) tests of air-conditioning system reconfigurations to reduce the effects of microthermals on the beam uniformity.

A summary of OMEGA operations during this quarter follows:

Driver Test and Alignment Shots	208
Beamline Test and Alignment Shots	145
Target Shots	<u>159</u>
TOTAL	512

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