Section 4
LASER SYSTEM REPORT

4.A GDL Facility Report

The GDL system was an active target interaction facility for the entire period. Various experiments supported by GDL included x-ray conversion tests; preliminary studies for x-ray laser experiments; a number of shots to evaluate the benevolent smoothing effect of irradiating targets with laser beams that pass through ~200 Torr of inert gas, such as helium; several ALPHA backlighting experiments, where the GDL beam was transported to the OMEGA chamber; phase-plate tests; NLUF experiments; and other uniformity evaluations. The active mirrors are still being reworked in GDL; thus, system energies are currently limited to 200 J in the infrared.

A summary of GDL operations for this quarter follows:

Target Shots (BETA)	380
ALPHA Shots	8
Pointing Shots	78
Beamline Test Shots	80
TOTAL	546

4.B OMEGA Facility Report

During this period OMEGA served as a target irradiation facility for various experimental campaigns. There were no major upgrades on OMEGA in this quarter. Energies from the system remained reliably in the range of 1.5 kJ, with up to 1.9 kJ on demand. Beam-to-beam energy balance was as low as ±3%, with most shots in the ±5%-7% range. The predominant effort of the group was aimed at support of the high-density campaign.

In September, activities centered on the improvement of beam balance. A goal of ±3% is being sought, with a high-accuracy calibration of the MESS as the initial activity. New preamplifier packages have been installed on the MESS (multiwavelength emission-sensing system) "moose" calorimeters, improving their reliability. High-energy electrical calibrations were completed, as was tri-color calibration of the MESS diodes. User shots, for the University of Maryland, occupied a week of shooting OMEGA coincident with the ALPHA beam from GDL, in an experiment to test hot electron pumping of transitions in neon-like silver and tin. Accurate measurement of transport losses culminated the month's and fiscal year's activities, with final beam balances at 3.9% rms. Continued efforts will be spent to achieve the 3% goal.

A summary of OMEGA operations for this quarter follows:

Target Shots	299
Beamline Test Shots	129
Driver-Line Shots	71
TOTAL	499

As this report signals the end of the fiscal year, we note that the cumulative total of target shots with OMEGA (including ALPHA shots) this year was 814. This represents a increase of 36% over previous years, which can be attributed to the reliability of the OMEGA laser system, and to the hard work and dedication of the Operations Group.

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