Section 4
LASER SYSTEM REPORT

4.A GDL Facility Report

There was a total of 320 GDL laser shots during the first quarter of FY92. The 142 target shots were used by one LLE experiment and three NLUF user experiments. The NLUF user experiments were done by groups from the National Institute of Standards and Technology, the Naval Research Laboratory, and the University of Maryland. In addition, construction was started on a spatial filter that will be used to transport the GDL laser beam into the LLE Damage Testing Laboratory. This is a UV spatial filter that will allow the testing of large-scale UV optics.

The decision was made this quarter to do a major refurbishment of the GDL facility. The work will start in June of 1992 and continue for approximately nine months. Both the laser and the experimental target bay are to be improved and will provide users with a better experimental facility.

The shot summary for the GDL laser this quarter is as follows:

Laser system		148
Laser calibration		30
Target		142
	TOTAL	320

4.B OMEGA Facility Report

There was a total of 265 OMEGA laser shots during the first quarter of FY92. The 65 target shots were delivered to three experiments in preparation for the American Physical Society's Division of Plasma Physics meeting. These experiments were done to study the effect of low-order, ℓ-mode illumination nonuniformity, the implosion of surrogate cryogenic targets (CD shells), and laser-system performance characterization. The smoothing by spectral dispersion apparatus was removed for these shots while a new set of gratings is being manufactured. The temporal shape of the laser beams was Gaussian for the target shots.

The OMEGA driver line continued its progress toward the ability to deliver shaped pulses to the input of OMEGA. A beam from the pulse-shaping equipment was injected into the OMEGA driver line and the optical-component alignment was started. Diagnostics to sample the spatial beam profile at various image planes in the driver line were added and a streak camera was set up to measure the temporal profile of the laser beam at the output of the driver line. This will be finished during the next quarter when the new gratings are to be mounted and a modulator with a new crystal installed.

The shot summary for the OMEGA laser this quarter is as follows:

Software test		20
Driver		141
Laser		39
Target		65
	TOTAL	265

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