# Targeting of Convoy Vehicles is Not Disrupted by a Green Laser: Moving, Predictable Targets in Bright Lighting

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## Abstract

Protecting military convoys from sniper fire is a priority. A fielded green laser was evaluated for its capacity to interfere with the ability of a shooter to hit moving outdoor targets, both while the laser was on and again just after termination. We tested each subject’s ability to locate, identify, and hit a target using rifle-like armaments, during trials with or without laser exposure. Impairment was defined as fewer target hits during laser trials, compared to no-laser trials. Two trucks traveling in a convoy served as targets. Eight subjects shot during 14 trials. On laser-exposure trials, Target 1 was presented concurrently with the laser, and Target 2 was presented immediately after removal of both Target 1 and the laser. Target 1 & 2 accuracy on laser trials did not differ from no-laser trials. On non-exposure trials, no target accuracies differed. Shooter skill did not affect impairment. Under bright lighting conditions, shooting at moving (but predictable from extrapolation), brief-exposure targets, the maximum eye-safe green laser exposure did not impair targeting success while on the shooters eyes nor afterward. Perceptual mechanism and situational contributors to effectiveness are discussed.

## Subject Terms

laser, shooting accuracy, impairment, human behavior, suppression
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• Protecting military convoys from sniper fire is a priority.
• Soldiers would like to use non-injurious lasers in civilian settings to impair potential shooters to keep convoys safe.

Specific Objectives
• Determine effectiveness of a green laser under eye-safe conditions against the ability of a shooter to hit a target.
• Test laser effectiveness during laser exposure and immediately after laser exposure.

Concurrent Exposures
• Test human volunteers shooting outdoors under daytime lighting at moving convoy vehicles
• Compare shooting accuracy on laser-exposure trials with that on non-laser trials.

Bird’s-Eye View

Convoys Protection Test-Bed Layout
Figure 1: Viewed from above (Upper Panel) and from side (Lower Panel). Note the laser path relative to the truck target. The B.E. Meyers GBD-III is mounted on a tripod on the bed of the stationary truck in the background, and shone over the top of the first truck-mounted target.

Convoys Path and Targeting Area
Figure 2: Convoy targets were visible during their approach to the targeting area. Shots at targets were allowed only when targets were between the white reflector posts. The pink dot on the forward truck’s target constitutes a “hit.”

Gather empirical data on real human behavior in response to non-lethal weapons and systems using real people in tactically relevant situations