

Small Caliber Guided Bullet



Sandia National Laboratories has designed a self-guided .50 caliber projectile that utilizes a laser designated target and is configured to be fired from a small caliber, smooth bore gun barrel. Self-guided projectiles increase the probability of hit on targets at long range.

System Design

The self-guided projectile utilizes a laser designator and is fired from a small caliber smooth bore gun barrel. The nose of the bullet is equipped with an optical sensor along with counterbalancing mass and stabilizing strakes. Guidance and control electronics and electromagnetic actuators housed in the aft section of the projectile operate small control fins to steer the projectile to the target based on input from the optical sensor. Analysis and testing has been completed to demonstrate feasibility of the design. Additional development work is needed to further develop a full system prototype for field demonstration.

Benefits:

- Reduced cost
- Aerodynamically stabilized projectile
- Laser target designation and navigation sensor for increased accuracy
- Experimental flight tests can be conducted using commercial off-the-shelf components

Potential Applications:

- Military
- Law Enforcement



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Subject: Guided Bullet Program
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