

Making M203 Grenades Smarter

CDT Michael Faries '07

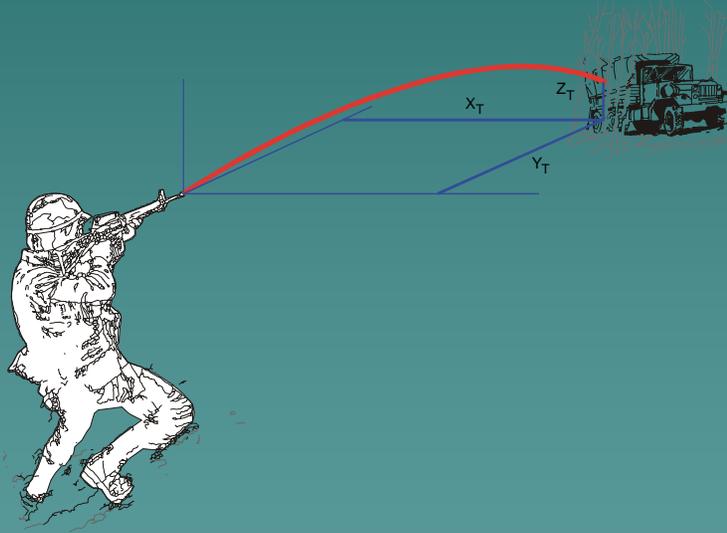
A-3

A stylized, dark teal silhouette of a mountain range is positioned in the bottom right corner of the slide, extending from the right edge towards the center.

Agenda

- ◆ What is the project?
- ◆ What is the point?
- ◆ How does it work?
- ◆ Results

What is the project?



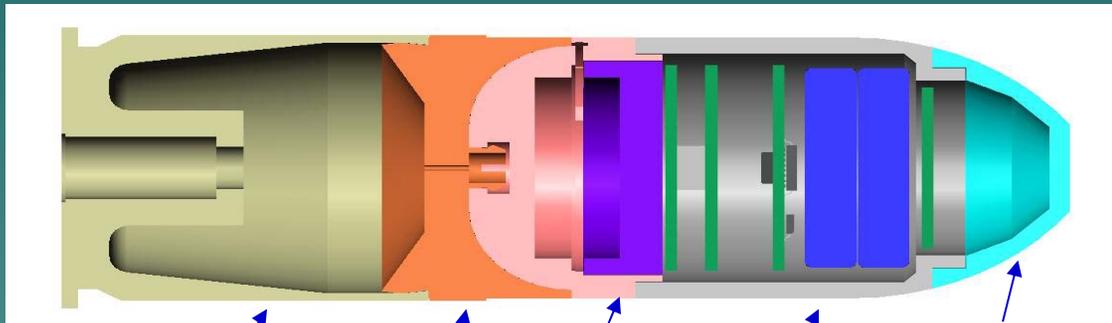
- ◆ SCORPION project goal is to create a guided spinning projectile
- ◆ Guidance system onboard M203 rounds
- ◆ Integration of multiple technologies for future projects

What is the point?

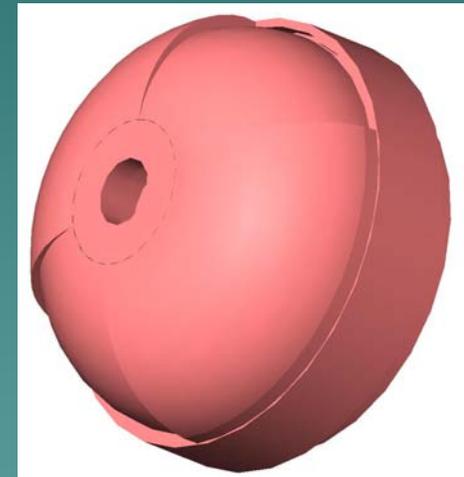
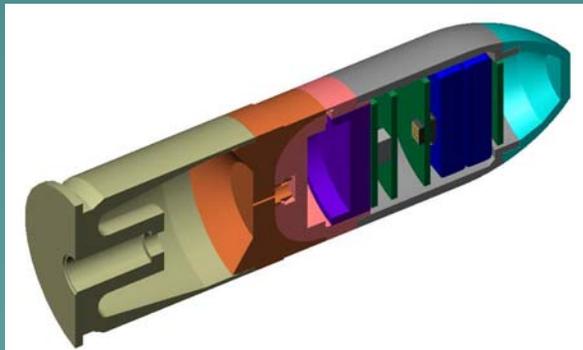
- ◆ Increased lethality by enhancing range and accuracy capabilities
- ◆ Future applications with current and new weapon systems



How does it work?



Cartridge Case Obturator Boattail Body Ogive



strake-like fences

How does it work?

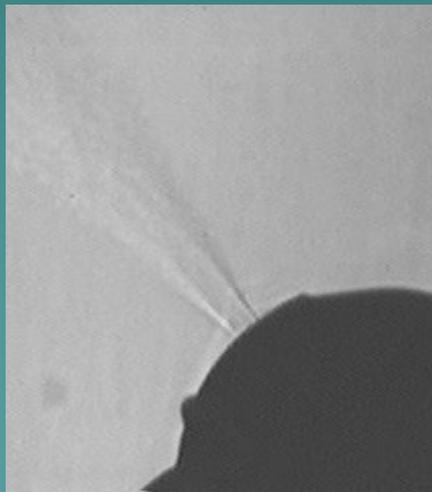
Multi Port Gas Generator



40 mm dia.
5 mm thick

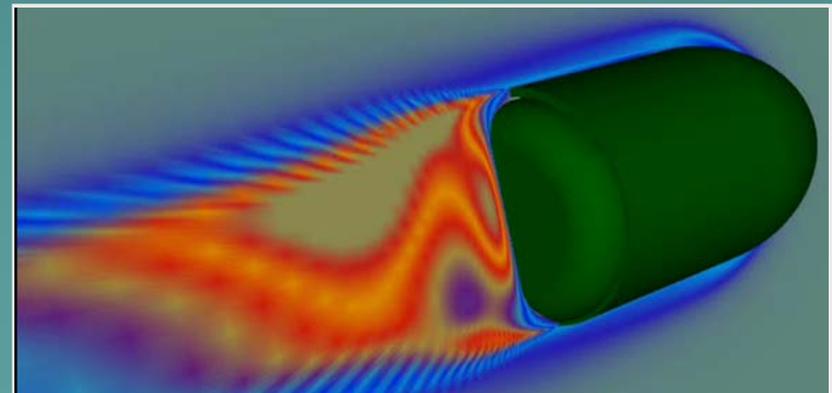


orifice



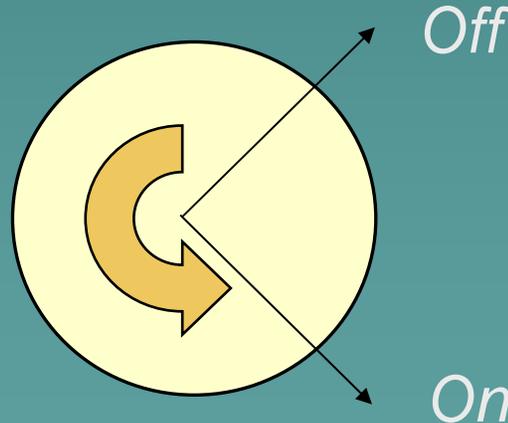
Schlieren image of jet

- ◆ Small jet discharges during flight
- ◆ Alters pressure around projectile, causing lift or sink



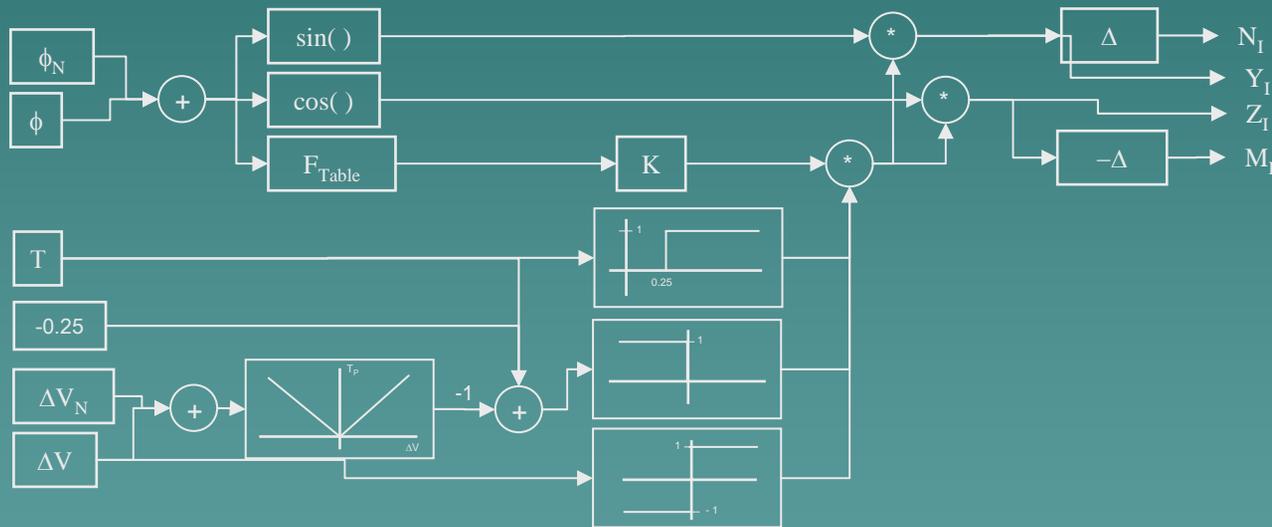
How does it work?

- After launch, wait 0.5 seconds, then activate at maximum voltage at same roll angle each revolution.
- Activate for 1/4 revolution (about 4 diaphragm cycles) such that force generated will be horizontal (left or right, as selected)
- On approximately 4 ms, and off 12 ms each revolution

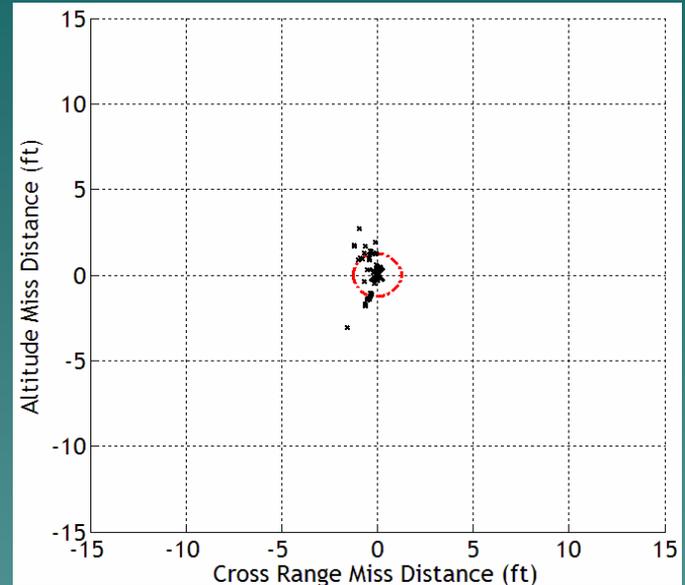
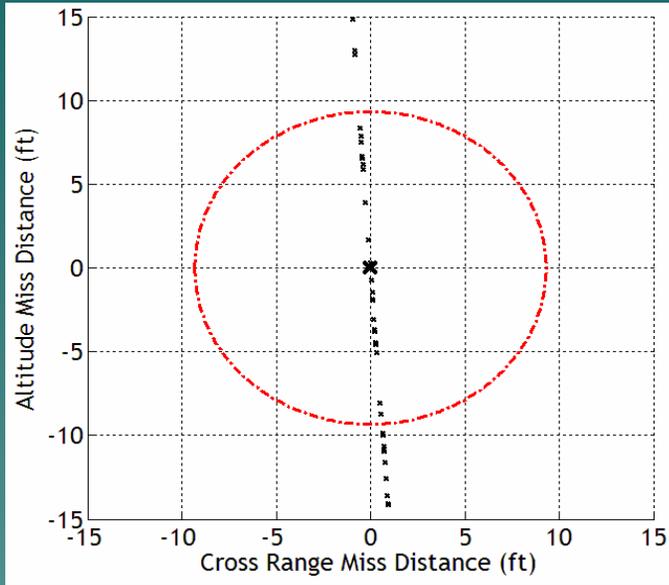


How does it work?

◆ PRODAS simulation algorithm



Results



- ◆ Dispersion greatly reduced at 250 m
- ◆ Easily control spin stabilized projectile
- ◆ Easily integrated into other systems

Questions?

