Overview

- Griffin® missile background and overview
- Griffin® capabilities
- Advantages
- Ground launch system
- Ground launch examples
- Production
- Summary
Griffin® Program

- **Background**
  - Started on company funding in 2004
  - Initial ground-launch demonstration in 2007
  - Program built upon Quick Reaction Capability efforts
  - Demonstrated reliability, accuracy, and lethality

- **Griffin® Production**
  - More than 1,200 missiles produced
Griffin® Missile Production – More than 1,200 produced
– Production initiated 2008
– Production floor area upgraded in 2009 for improved flow and capacity
Griffin® B Block II missile

- **Small and light:**
  - 43 inches
  - 33 lbs

- **Precise:**
  - SASSM GPS/INS
  - Semi-active laser (SAL)

- **Reliable**
  - Tube carriage/launch
  - Proven component heritage

- **Lethal with low collateral damage:**
  - 13 lb blast fragmentation warhead
  - Warhead fuzing options:
    - Height of Burst (HOB)
    - Point Detonate (PD)
    - Delay
  - Confined lethality

- **Cockpit selectable options provide real-time flexibility / assessment**
  - Fuze settings: PD, HOB, Delay
  - Laser PRF codes
  - Built In Test (BIT)
Griffin® - B Block II – Ground Launch

- Fires forward out of Tube using Launch Motor

Vertical or Angled Launch

- Umbilical connector
- Retention mechanism housing
- Retention spring assembly
- Launcher connector
- Break-through environmental/EMI seal (both ends of launch tube)
- Tube guides (Not all visible in this view)
Current Griffin® Warhead

- 13 lbs total weight
- 4.9 lbs high explosive
- Steel case internally scored
Griffin® Target Set

Personnel in the Open

Light Trucks

Personnel in Urban Environments

Heavy Trucks
Griffin® Advantages

- **Small, light**
  - 44 lbs AUR weight (w/ tube), 45” x 5.5” tube

- **Cockpit/GCS-selectable capability**
  - Point Detonate, Height-of-Burst, Delay Fuze mode
  - Laser PRF codes
  - Direct attack, High Impact Angle guidance

- **Low collateral damage**
  - Precise guidance, confined lethality, selectable effects

- **SASSM GPS/INS navigation**
  - All weather capability
  - Indirect fire / non-LOS target engagements

- **Wide field of view SAL seeker**

- **Simplified logistics**
  - No user / field assembly / diagnostics – no special skill required
  - Common missile for surface, rotary and fixed wing applications
  - No special equipment (SE) for loading
  - Small logistics footprint
## Griffin® ConOps Example

### Missile #1 – GPS only
1. Ground surveillance radar detects movement.
2. EO/IR sensor confirms enemy patrol.
3. Target bearing and distance obtained from EO/IR sensor.
4. Measured target location passed to Griffin®.
5. Operator initializes Griffin® missile #1, selects and verifies target coordinates, selects HOB fusing, and launches missile.
6. Missile flies High Impact (Steep) trajectory and detonates.

### Missile #2 – GPS to SAL
1. Occupied enemy vehicle observed.
2. Target bearing and distance obtained from LRTV Viper Binos.
3. Measured target location passed to Griffin®.
4. Operator initializes Griffin® #2, selects and verifies target coordinates, sets Direct Attack (Shallow) trajectory, PD fusing, laser code, and launches missile.
5. Missile flies to target coordinates, seeker detects laser energy from ground or airborne designator, and transitions to SAL terminal guidance.
Griffin® Launch - Apr 10

- Initial ITAS targeting with further target mensuration

**Target:** Cement Bunker w/Mortar Pit  
**Range:** 4 km  
**Guidance:** GPS  
**Fuze:** Delay
Griffin® Launch - Nov 10

- **Launch #1**
  - Target: Mortar Crew
  - Target Range: 2.8 km
  - Guidance: GPS/INS
  - Fuze: HOB

- **Launch #2**
  - Target: Urban Courtyard
  - Target Range: 3.8 km
  - Guidance: GPS/INS
  - Fuze: PD
Urban Courtyard
(40 ft long x 30 ft wide x 17 ft high)

Before

After
Wedge Launcher on HMMWV
Notional Griffin® / RAM Integration Field Configuration

Griffin® Adapted RAM Launch Tube:
- Initially, B-Missile
- Ultimately, SeaGriffin™

RAM Launcher

Launcher loaded for mission requirements:
Mix of RAM / Griffin®

Fire control system IDs weapon: RAM, Griffin®-B, SeaGriffin™

Dual-Capable (RAM & Griffin®) Launch System
Griffin® Vertical Launch Range

BLK II Configuration

ER Configuration

Griffin ER – Max range, No Alt limit
Griffin ER – High Impact Angle, No Alt limit
Griffin ER – High Impact Angle, 3K AGL Alt limit
Griffin – Max range
Griffin – High Impact Angle, 3K AGL Alt limit
Summary

- **Griffin**® is a mature weapon system
  - Fielded system with over 1,200 units produced
  - Low-risk path to future capability spirals

- **Griffin**® is readily adaptable to wide range of systems for all services
  - Light weight
  - Operator-selectable options
  - Simple RS-422 interface

- **Griffin**® can provide an immediate ground launch capability
  - **Griffin**® B Block II Missile and Wedge Launcher
  - Additional capability achieved with incorporation of Extended Range rocket motor