Innovation ... Delivered.

Mortar Guidance Kit (MGK)

2010 Joint Armaments Conference

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APMI – Precision on the Front Line

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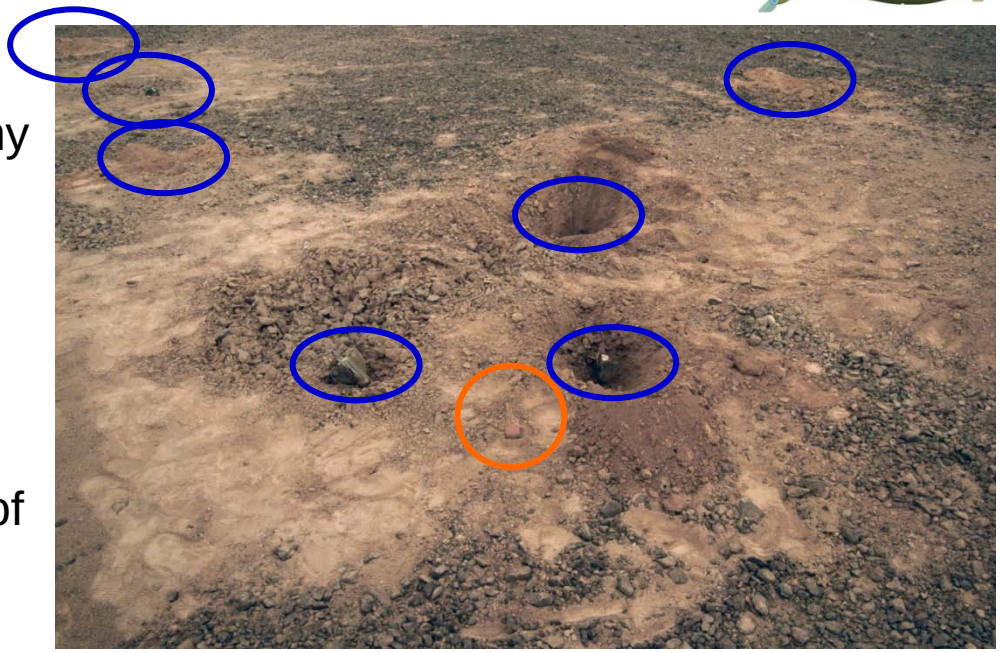
Discussion Topics

- Responding to Soldiers Needs – Why Accelerated Precision Mortar Initiative (APMI)?
- Mortar Guidance Kit (MGK) – ATK's Answer to APMI
- Demonstrated Capability – Results of Demonstration Test
- Delivering Precision – APMI Program Plan



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Why APMI? – Respond to Soldier Needs

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Precision Benefits

Minimize Collateral Damage

APMI Requirements – The needs of the Soldier

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Capabilities:

- Accuracy: 10m CEP (Threshold); 5m (Objective)
- Lethality: Similar kinetic effects of current munitions
- Maximum Range: 6.5km or greater
- Guidance: GPS Selective Availability Anti-Spoofing Module (SAASM)
- Compatibility: US 120mm Mortar System

What is APMI? – Precision for 120mm Mortars

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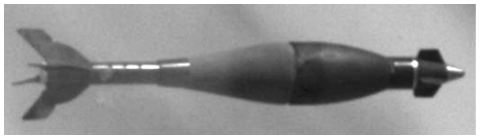

XM395, 120mm HE Guided Cartridge

M32
Lightweight Handheld
Mortar Ballistic Computer

Urgent Material Release (UMR)
of Four Systems

Precision Lightweight Universal
Mortar Setter System
(XM701 PLUMSS)

Mortar Fire Control System

Stowage Kit: 120mm Mortar, M326

M150/M151
Dismounted

120mm Mortar, M120

MGK – Extending PGK Innovation

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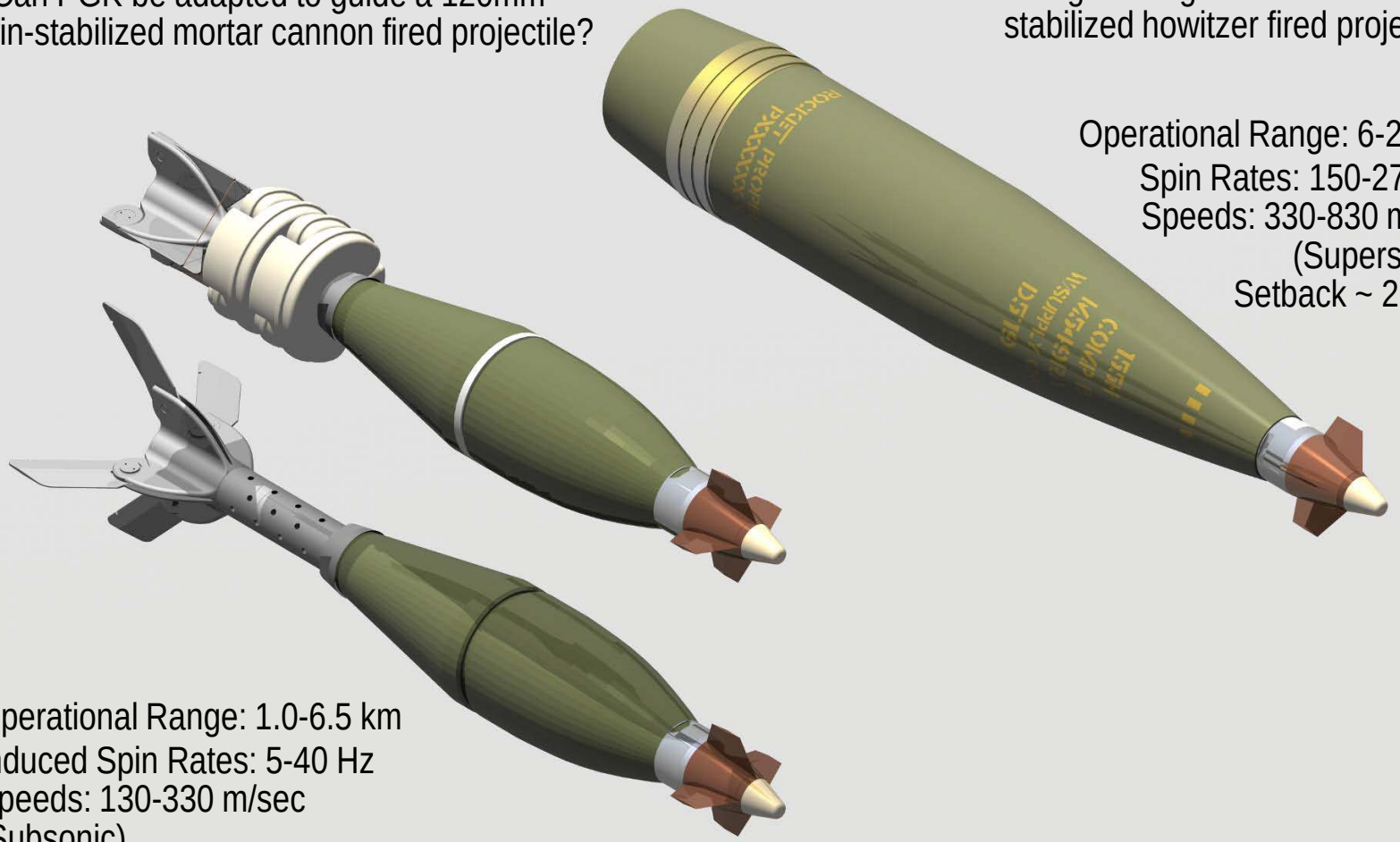
Can PGK be adapted to guide a 120mm fin-stabilized mortar cannon fired projectile?

PGK is designed to guide a 155mm spin-stabilized howitzer fired projectile.



Operational Range: 6-27 km
Spin Rates: 150-275 Hz
Speeds: 330-830 m/sec (Supersonic)
Setback ~ 20 KG

Operational Range: 1.0-6.5 km
Induced Spin Rates: 5-40 Hz
Speeds: 130-330 m/sec (Subsonic)
Setback ~ 8.5 KG

APMI – Integrating Demonstrated Technologies

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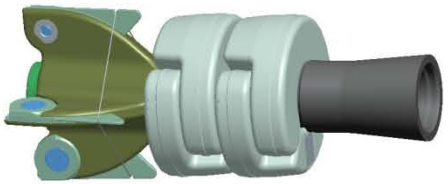
Tail Subsystem



- Lengthened boom/boattail
- Standard M1020 igniter
- Proven high-hat M47 charge increments
- Proven folding fin design
  - Fin hub cant applied to induce body spin

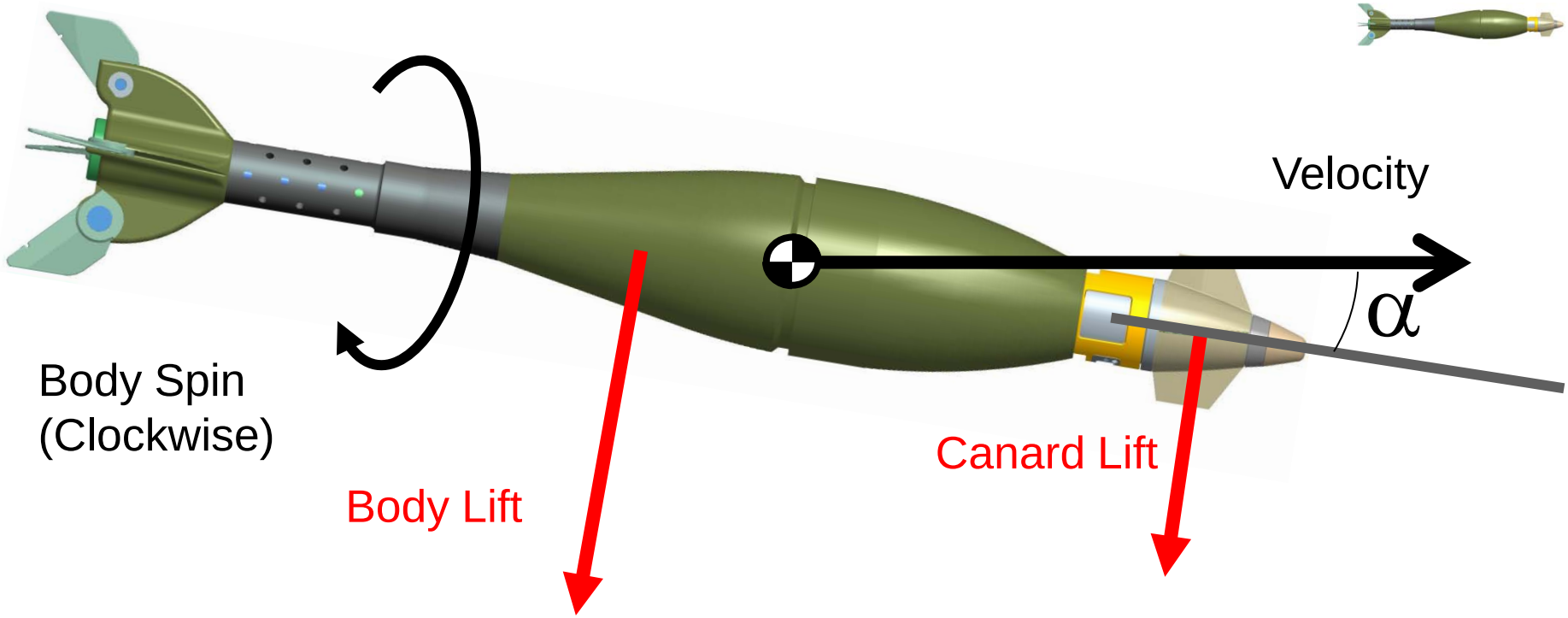
M934 Body Subsystem

- Standard M934 mortar body
- Obturating ring for pressure seal
- Composition B explosive fill
  - Modified for deep intrusion fuze well

Nose Subsystem

- PGK nose assembly with modifications
- Fixed canard assembly
- IEC GPS receiver
- Common Mortar S&A
- PGK booster assembly
- Canard cover for EPIAFS interface

APMI – Simple & Effective Precision



- Steady-state must result in a moment balance
- Round noses down to counter canard moment with body pitching moment
- Body lift and canard lift in the same direction

APMI – Demonstrated Precision

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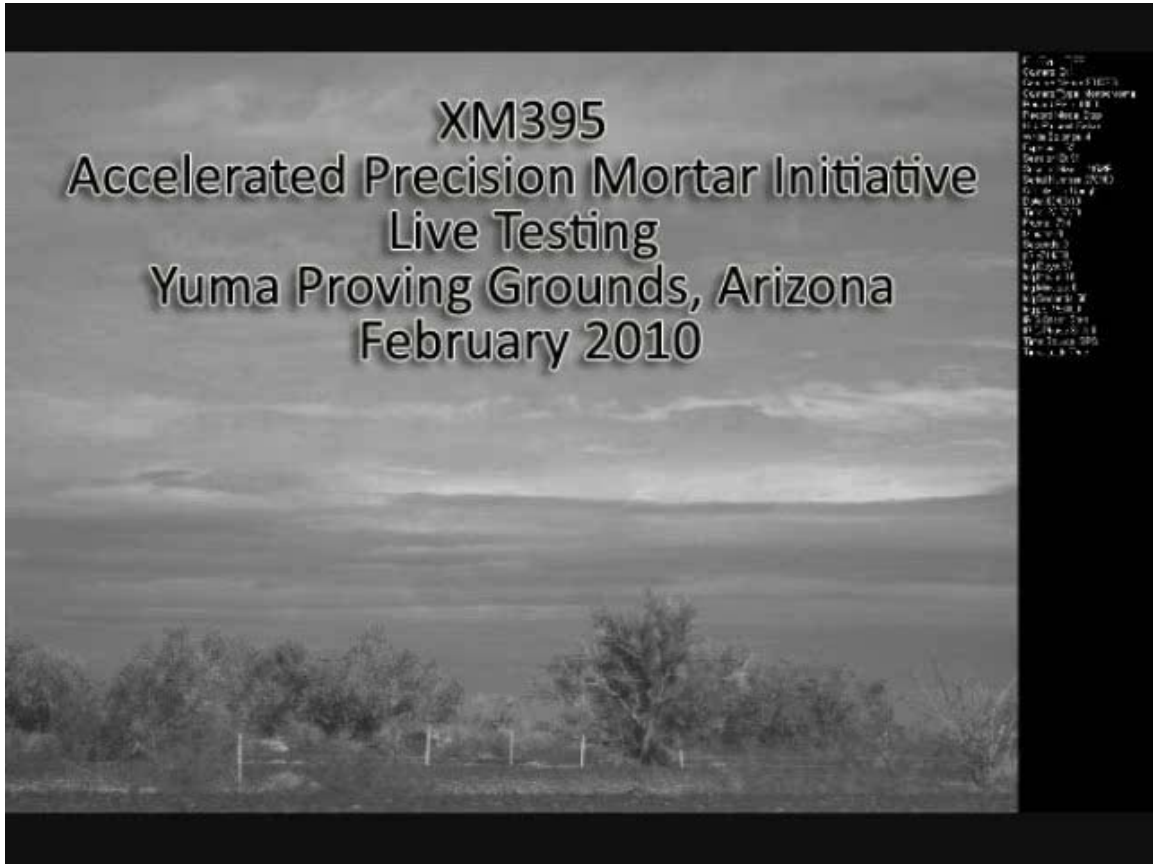
TRN2291 & 2299



APMI Precision = Significant Reduction of Rounds to Defeat Targets

APMI – Phase 2 Deliver Precision to Battlefield

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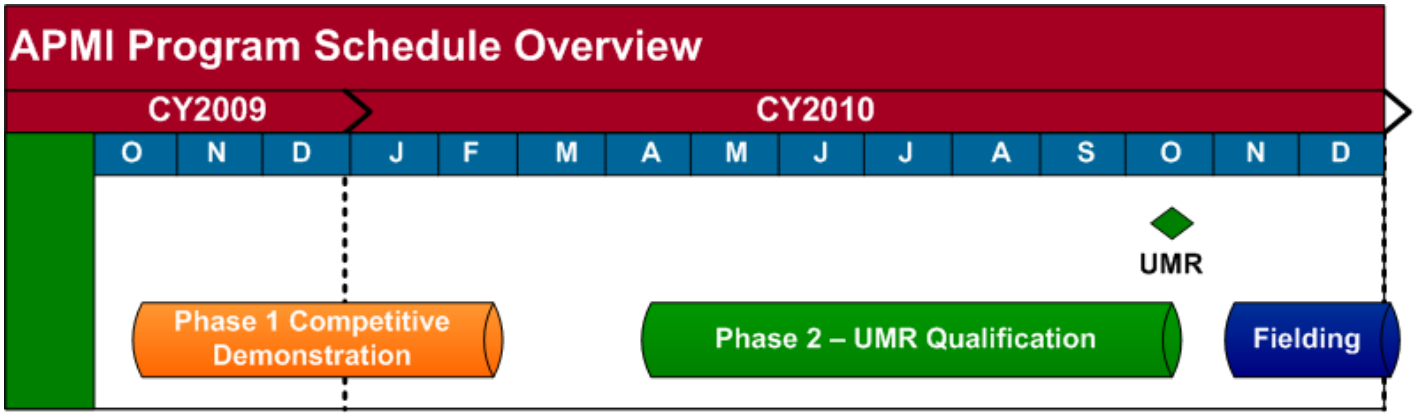

ATK selected as winner of competitive demonstration program in April 2010

Building hardware for qualification testing that begins Summer 2010

Urgent Material Release (UMR) planned for October 2010, with fielding shortly after

Summary – Delivering Precision

APMI Provides Solution to Immediate Soldier Needs

- Effective Response to the field
- ATK's MGK delivers Required Capability at completion of Competitive Phase I

APMI Succeeded Building on Proven Technologies

- Type classified 120mm Mortar Systems & Fire Control
- Successful PGK program provides Basis for MGK Approach
  - –MGK modifies M934 HE Cartridge making it Precise

ATK's MGK Demonstrated Necessary Capability

- Delivered <10m CEP in Competitive Shoot-off

APMI Will Deliver Capability to the Soldier this Year