Precision Guidance Kit (PGK) Program Update

2015 NDIA Armament Systems Forum
(Reference number:17409)

Orbital ATK Armament Systems
20 April 2015
Agenda

- Orientation
  - PGK Description
  - Performance Predictions
  - Applications
- PGK Production Program
  - FAAT Passed
  - Production Status
- PGK Futures
  - Foreign Initiatives
Orientation: M1156 Precision Guidance Kit (PGK) Overview

PGK is qualified with the U.S. Army

U.S. production is underway

PGK is being used in combat today

PGK Delivers

- GPS guidance kit with fuzing functions
- Replaces the existing standard 155mm artillery projectile fuze
- PGK guidance greatly improves accuracy of conventional artillery in the inventory
  - Conventional ammunition with PGK
    - 30m objective circular error probable (CEP)
  - Conventional ammunition with legacy fuzing
    - > 200m CEP at max range
- Maintains > 90% of range capability of conventional all-up round (i.e., projectile & fuze)
- Self generating power (no battery)
- Reliable – one moving part
- Full two dimensional guidance to impact
- Point Detonation & Proximity Fuzing

Revolutionary: Converts Existing Artillery Rounds Into Affordable Precision Weapons

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Circles represent accuracy in terms of CEP (Circular Error Probable)

M549A1 with PGK

M549A1 with conventional fuze

All using \( \frac{1}{2} \) hour old Meteorological data

Improved Accuracy at All Ranges
Orientation: Value Proposition

- Warehouse/storage costs
- Transit costs for deployment
- Supply chain costs
- Re-Supply costs
- Artillery fire mission costs
- Air asset support costs
- Unit production costs
- Life-cycle replacement costs
- De-Mil costs

Precise = Significant Cost Savings Over Entire Weapon Life Cycle
Orientation: Key Innovations

• Simple Mechanical Design
  ➢ Fixed Canards
    o No Mechanical Actuators
    o One moving part
  ➢ No Slip Rings

• Reliable Electronic Design
  ➢ GPS with Roll Angle Determination
    o No Inertial Sensors
  ➢ No Battery

• Built-In Tactical Telemetry
  ➢ Development Tests
  ➢ Stockpile Surveillance
  ➢ Lot Acceptance Tests
Demonstrated on multiple platforms

- **155 mm Artillery**
  - M795
  - M549
  - M107
  - DM111
  - XM1128

- **Mortars**
  - APMI
  - PERM
Orientation: Qualified Applications

Qualified on Two Weapons & Two Projectiles

M109A6
M777A2
M549A1
M795
Production Start-Up

- Production initiated at Plymouth MN facility
  - FAAT accepted December 2014
  - Low rate production build started 19 January
    - First assembly with trained technicians
  - Line filled on 26 February
  - First lot delivery (204) planned for May 2015
PGK Futures: Foreign Initiatives

- Howitzer: PzH 2000
- Projectile: DM111
- Charge: Inert
- Range: 27 Km
- Shots: 10
- Note: Hole in roof

On Track to Larger Market

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Questions?