National Defense Industrial Association
42nd Annual Armament Systems:
Gun and Missile Systems Conference & Exhibition

General Dynamics
Ordnance and Tactical Systems

155mm XM1063
Non-Lethal Personnel Suppression Projectile

April 23-26, 2007
Charlotte Convention Center – Charlotte, North Carolina

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XM1063 - Outline

- Introduction
- Why Non-Line of Sight Non-Lethal?
- XM1063 Design
- Program Timeline
- Program Successes
- Upcoming Program Events
- Summary/Conclusions
- Acknowledgments
XM1063 - Introduction

- XM1063 Provides Non-Line of Sight Non-Lethal Capability to the US Army
- US Army ARDEC Leads the IPT That is Developing the XM1063
  - GD-OTS focuses on payload submunition development and production of test hardware
  - Many contractors and other government agencies have contributed to the IPT’s success
- Program Is In the Third and Final Year of an Advanced Technology Objective Development Effort
- Progress Made in First Year of Effort Was Presented at Last Year’s Conference
- This Presentation Will Update Progress To Date
XM1063 – Why Non Line of Sight Non-Lethal?

- XM1063 Intended to Provide a New Capability
  - Non Line of Sight Non-lethal
    - Separate combatants from non-combatants
    - Suppress, disperse or engage personnel
    - Deny personnel access to, use of, or movement through a particular area, point or facility

- Addresses Need for Non-Lethal Options That Is Highlighted by Current Conflicts in Iraq and Afghanistan
  - Minimizes collateral damage, fatalities and permanent injury
XM1063 Design

Utilizes Type Classified M864 DPICM Projectile Body, Base Burner, Fuze, Expulsion Charge

Non-Lethal Submunitions Replace DPICM Payload

Submunitions Dispense Non-Lethal Personnel Suppression Agent Without Detonators or Explosives

XM1063 Non-Lethal Submunition – Post Dispense
XM1063 – Program Timeline

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**CTD**
- Payload Analysis & Selection
- Dissemination Methods & S
- Canister & Expulsion Analysis
- Initial Effectiveness Analysis M&S
- Prototype Fab & Struct Tests
- ECBC, USAFAS M&S
- Target Human Effects Characteristics
- Effectiveness Analysis M&S
- Data for Legal & Compliance Review
- Final Design/Fabrication Exit Criteria Demo

**Ballistic Flight Test Demo (TRL 5)**
- Component and Sub-System
- NL PS payload simulant delivery

**Full Up System Demo (TRL 6)**
- Max Range Live Firing
- KE Mitigated Sub-munition for NL PS from a 155mm Projectile Cargo Rd

**Transitioned at PM**

**Legend:**
- Actual Start
- Actual End
- Milestone
- Test Complete
- Planned Start
- Planned End
- Planned Milestone (TRL Level)

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XM1063 Program Successes

- All Up Round Testing
  - Successful Test Firings Demonstrating TRL 5+
    - Standard 39 Caliber Gun
      - June 2005, MACS Zone 4 (original submunition design)
      - July 2006, MACS Zone 5 (updated submunition design)
      - February 2007, MACS Zone 4 (further updated submunition design)
    - Prototype FCS NLOS-C
      - July 2005, MACS Zone 3 (original submunition design)
XM1063 Program Successes

- Component Level Testing
  - Submunition Static Dissemination Testing
    - October 2005 (various submunition configurations)
    - September 2006 (various submunition configurations)
  - Helicopter Drop Testing
    - December 2005 (updated submunition drag device design)
  - Wind Tunnel Testing
    - June 2005 (original submunition drag device design)
    - October 2006 (further updated submunition drag device design)
  - Non-Lethal Payload Clinical Trials
  - Frangible Case Design Development
    - Ongoing
  - Submunition Structural Testing
    - October 2006
XM1063 Upcoming Program Events

- Milestone B – Transition to PM
  - TRL 6 Demonstration Test Firing scheduled for 4QTR FY07
    - Minimum and Maximum Range
    - Flight Stability
    - Structural Integrity
    - Target Effectiveness
    - Area Coverage
XM1063 – Summary/Conclusions

- Continued Program Success Since Beginning of Program
- Provides Non Line of Sight Non-Lethal Capability
- Utilizes Type Classified M864 Components for Easy Integration Into Inventory
- Demonstrated Using Standard 39 Caliber and Prototype FCS NLOS-C (TRL 5)
- Transition to PM at the End of FY07
XM1063 - Acknowledgements

I’d like to acknowledge and thank the entire XM1063 IPT. The contributions of each IPT Team member and member organization has allowed for continued program success.
XM1063 POC Information

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