**Advanced Munitions Warhead Manufacturing Improvements**

*Development of manufacturing techniques on key components and assembly/loading process to reduce advanced munition warhead manufacturing costs and enable munition optimization.*

**OBJECTIVE / SOLUTION**

Develop novel manufacturing techniques to enable munition optimization of weight, cost and performance. Focus areas include:

- Molding of insensitive munition (IM) and fragment generating sleeves for warheads
- Multi-explosive formed penetrators (M-EFP)
- Embedded tungsten fragmenting components
- Single increment, no-post machine explosive loading process for warhead bodies.

**ACHIEVEMENTS**

- Investigated the feasibility of a technically viable and cost effective solution for single increment, no post machine warhead pressing and designed a warhead loading tool system using a novel approach
- Identified and tested multiple candidate polymers for construction of the IM sleeve and successfully molded using various processes inside a small scale cylinder. 2 of the 5 processes had a uniform sleeve thickness and will melt at desired temperature to meet the IM requirement

**BENEFIT**

- Lower cost through reduced number of manufacturing processes
- Improved safety by decreasing touch labor during munition manufacture
- More reliable munitions using fragmenting sleeves enabling warheads to fragment into reliable sized fragments and achieve IM requirements

**STATUS**

- IM Sleeve and warhead pressing work is in process. Expected manufacturing process transition into Military Operations on Urban Terrain (MOUT) ATO, Shoulder Fired Munitions
- M-EFP liner and embedded fragment component processes to be evaluated in FY12

**WEAPON SYSTEMS / SECONDARY ITEMS IMPACTED**

- Military Operations on Urban Terrain (MOUT) ATO, Shoulder Fired Munitions
- Extended Area Protection & Survivability (EAPS) ATO
- 120mm Advanced Multi-Purpose (AMP)
- Cluster Munition Replacement (CMR)
- M1A2 Abrams Main Battle Tank
- Shoulder Launched Munitions

**POTENTIAL COST AVOIDANCE**

- Return on Investment (ROI) of 8.5 to 1 with a cost benefit of $60M

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