

Advanced Munitions Warhead Manufacturing Improvements/ Advanced Tungsten Manufacturing Improvements

OBJECTIVE/SOLUTION:

Develop an improved Tungsten manufacturing processes for Kinetic Energy penetrators.



M1 Abrams



Large Caliber

Medium Caliber

Achievements:

- Applied novel manufacturing techniques for Tungsten sintered and melted baseline processes and characterized material properties
- Automated Tungsten melt process for reducing cost of kinetic energy penetrator manufacturing
- Achieved metrics goal by providing a 200% diameter increase over baseline
- Achieved metrics goal by finish machining medium caliber prototype penetrator profile
- Validated structural integrity and target performance with medium caliber subscale testing

Benefits:

- Reduces Industrial Base single point failure risk
- Provides novel, validated and automated Tungsten manufacturing processes for potential application to production of medium and large caliber kinetic energy penetrators

Transition and Weapon Systems/Secondary Items Impacted:

- Large & Medium Caliber Kinetic Energy Cartridges for M1 Tank and M2 Bradley rounds

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