

## Hellfire-R Warhead Case Manufacturing Technology Enhancements

### PROBLEM / OBJECTIVE

There is an immediate need to increase production capacity and reduce the cost of the Hellfire-R (Hellfire-Romeo) Aermet body. The process is costly due to excess material required for the current production process.

The objective of this program was to develop manufacturing methods and processes that will provide a capability to reduce the body manufacturing cost while reducing performance variability of the Hellfire-R warhead.

### ACCOMPLISHMENTS / PAYOFF

**Process Improvement:** Low cost manufacturing processes that produce Aermet 100 raw material in tubing form prior to machining. Replaces existing forging process and reduces the manufacturing processing costs required to shape the rough raw material geometry. Manufacturing improvements included:

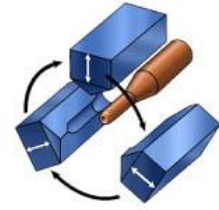
- Produce Aermet 100 raw material in tubing form prior to machining
- Adapting known manufacturing processes to form and machine this material for warhead bodies
- Replace existing forging process and reduce the manufacturing processing costs required to shape the rough raw material geometry.

### Implementation and Technology Transfer:

This process was transitioned to PM JAMS on the Hellfire – R Weapon System in 2016. PM JAMS, and OEM Lockheed Martin have validated the process for production and plans are in place to implement on future production contracts.



**Warhead Case**



**Hot Rotary Forge Process**

### Expected Benefits and Warfighter Impact:

Benefits include a per unit savings of \$450 with a 2 year payback period. Reductions in raw material required and reduction in manufacturing processes required to produce the warhead case contribute to the cost savings.

### TIME LINE / MILESTONE

Start Date	September 2012
End Date	February 2014
Transition Update	March 2017

### FUNDING

U.S. Army ManTech	\$1.0M
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### PARTICIPANTS

U.S. Army RDECOM Aviation and Missile Research, Development and Engineering Center (AMRDEC), General Dynamics-OTS, Lockheed Martin



**Hellfire Missile**