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Title: Hellfire Integrated Blast Fragmentation Sleeve Multipurpose Warhead

Abstract Text: The modern battlefield presents the warfighter with a multitude of threats ranging from heavy armored tanks to reinforced concrete structures. Defeat of this target suite has traditionally demanded an equally large assortment of weapon systems. The current Hellfire Missile system utilizes several warhead variants each of which is responsible for engaging a specific type of target. In conjunction with Lockheed Martin, General Dynamics funded an Internal Research and Development (IRAD) effort which resulted in the Hellfire Integrated Blast Fragmentation Sleeve (HF IBFS) multipurpose warhead. The HF IBFS warhead provides a one weapon solution for the warfighter to combat a variety of battlefield threats and eliminates the need for multiple Hellfire missile variants.

HF IBFS is a tandem warhead system composed of an ø83mm precursor and a multipurpose ø143mm K-charge warhead. The tandem warhead system is capable of engaging and defeating heavy armor tanks, modern urban structures, light shipping vessels, and various soft targets. The ø83mm precursor is a shaped charge warhead containing a conical metallic liner and is capable of defeating the most advanced Explosive Reactive Armor (ERA) encountered on modern tanks. The ø143mm K-Charge warhead employs a variable wall thickness metallic liner and is the primary kill mechanism when engaging heavy armor tanks, light armor personnel carriers, or shipping vessels. The ø143mm K-Charge is packaged in a hardened steel body and is capable of penetrating and defeating a suite of modern urban structures and bunkers. The hardened steel body provides exceptional lethality against soft targets via high velocity fragments and overpressure impulse. The HF IBFS warhead incorporates Insensitive Munition (IM) explosive as well as an inventive, thermally activated aft closure to comply with IM standards and protect the warfighter during hazardous battlefield environments.

Not only does the multipurpose HF IBFS warhead increase target defeat capability for the warfighter, it also eliminates the need for multiple, target specific, Hellfire Missile variants and improves response flexibility for the warfighter when engaging threats on the modern battlefield.