Lockheed Martin Demonstrates Revolutionary Tactical Vehicle Armor

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Lockheed Martin has developed and demonstrated a new lightweight, low-cost tactical vehicle armor that promises exceptional multi-hit survivability against armor-piercing rifle bullets and high-speed fragments from improvised explosive devices (IEDs).

The Macro-Composite Protection System (MAPS) armor will provide armor- piercing, bullet, fragment/shrapnel and blast protection with tactical theater durability and maintainability at a very low cost. The armor-as-a-system was developed by Lockheed Martin as a solution to the coupled threat effects often encountered in today's urban tactical environments, such as a bomb blast followed by a swarm of projectiles or armor-piercing sniper fire.

"We believe MAPS is a breakthrough in protective technology," said David Hunn, director - Mechanical Engineering at Lockheed Martin Missiles and Fire Control. "MAPS armor promises to provide an entirely new level of vehicle and personal protection to our forces that could save lives. And it should prove much less expensive than current ceramic armors once in production."

MAPS armor is undergoing ballistic testing and has successfully shown protection against realistic armor piercing and fragmentation threats with no penetration, at a weight approximately 50 percent less than its equivalent in steel armor protection. Lockheed Martin has briefed the U.S. Army, Navy and Marine Corps on preliminary testing results, and provided MAPS armor samples to the services for independent testing. Results of those tests should be available later this year.

MAPS armor is made out of a Lockheed Martin-developed macro-composite material encased in shock-absorbing polymers with a metallic strike face and spall plate. In recent testing, MAPS successfully stopped four successive shots of 7.62mm armor-piercing bullets striking at high velocity within a four-inch diameter circle.

"In addition to its capabilities against IEDs and armor-piercing bullets, we plan to study MAPS' ability to provide a level of protection against hand grenades, mines and other battlefield threats," Hunn added. "We are continuing our development and testing of MAPS armor to collect more performance data on a variety of threats, and prepare the material for future applications."

Although developed for military ground vehicle applications, Lockheed Martin also envisions potential application for commercial armored cars and vehicles, helicopters and ground attack aircraft applications.

Headquartered in Bethesda, Md., Lockheed Martin employs about 135,000 people worldwide and is principally engaged in the research, design, development, manufacture and integration and sustainment of advanced technology systems, products and services.

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