



ARMORWORKS, LLC.

EXPEDITIONARY FIGHTING VEHICLE (EFV) COMPOSITE ARMOR SYSTEM



ArmorWorks M915 and HMMWV Armor Kits

12

Topic Number: N01-004
(MARCOR)

SBIR Investment: \$699K
Project Revenue: \$62.8M

ArmorWorks, LLC.

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About the Technology

ArmorWorks LLC has developed a high-performance, low-cost composite armor suite for the U.S. Marine Corps' (USMC) new Expeditionary Fighting Vehicle (EFV). ArmorWorks developed the composite armor system in response to a Navy requirement for a lightweight armor component that can be affordably produced and assembled. The system is made from low cost composite ballistic materials, providing the EFV with maximum ballistic protection while maintaining a minimum overall weight addition. The ballistic protection suite, using state-of-the-art composite materials was evaluated, tested and presented to the Navy and USMC.

In early 2004, ArmorWorks won a contract from the Army for procurement of armor kits for the High Mobility Multipurpose Wheeled Vehicles (HMMWV). In 2005, the company received a contract from the USMC to replace the existing steel armor on its fleet of CH46 helicopters, and an additional contract in 2006, from the USMC for Enhanced Small Arms Protective Inserts (ESAPI). The technology is presently being used to provide extra armor for protective vests worn by marines and soldiers serving in Iraq and Afghanistan.

Military and Commercial Significance

The ballistic effectiveness of this hybrid composite armor for the EFV provides unique combinations of dissimilar composite materials that offer lighter weight protection, at a much lower cost than other evaluated high performance composites. The technology demonstrates the improvement of using backings in ceramic and fragment armor systems. The armor backing reduces cost and improves multi-hit protection and structural integrity of ceramic armors against armor piercing bullets, artillery fragments and improvised explosive devices. In addition, ballistic performance models and material cost models were developed for other armor system designs. The hybrid composite armor designs, ballistic performance models are applicable to personnel, aircraft, ship, and ground vehicle systems for both military and commercial applications

About the Company

ArmorWorks LLC is a Phoenix, Arizona privately held company that designs and manufactures high-tech body, aircraft, marine and vehicle armor, for protection against a broad spectrum of ballistic threats. The company specializes in all aspects of armor technology, design, in-house testing and material technology, and provides high-tech armor protection to DoD locations around the world. ArmorWorks has produced over 500,000 ceramic armor components for a variety of personnel armor, aircraft, and vehicle applications.

APPLICATIONS

- Vehicles: HMMWV armor, M-915 A2/A3 truck armor and the USMC Fast Attack Vehicles
- Aircraft: CH-47, CH-46, OH-58 and the – AH-64 helicopters
- Ship: Landing craft, air cushion
- Personnel: Body armor Small Arms Protective Inserts (SAPI), ESAPI and side SAPI